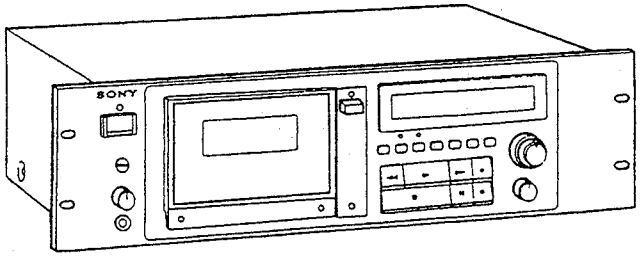
SRP-CT1

SERVICE MANUAL

AEP Model



Model Name Using Similar Mechanism	MU-D100

SPECIFICATIONS

Recording system: 4-track 2-channel stereo

Heads: Recording/playback (Hard permalloy head)
Erasing head (Ferrite head)

Motors: Capstan motor × 1 (Direct drive)
Reel motor × 2

Tape speed: 4.8 cm/sec. deviation ±1.3% (PITCH control is set at the center point)

Wow and flutter: WRMS
±0.08% W. Peak

Fast-forwarding and rewinding time
Approx. 80 sec. (with C-60 cassette)

Frequency response (Dolby NR off)
TYPE II cassette
20 – 17,000Hz ±3dB
TYPE I cassette
20 – 15,000Hz ±3dB

Signal-to-noise ratio (at peak level)

	Dolby NR buttons	Cassette	
		TYPE I	TYPE II
S/N ratio	Dolby C NR on	65dB	69dB
	Dolby B NR on	59dB	63dB
	OFF	52dB	56dB

Total harmonic distortion: 1.0%

Inputs
Line inputs
- Phono jacks (unbalanced) × 2
  Sensitivity −10dBs
  Input impedance 50 kΩ
- XLR-3-31 type (balanced) × 2
  Sensitivity +4dBs
  Input impedance More than 20 kΩ

Outputs
Line outputs
- Phono jacks (unbalanced) × 2
  Rated output level
  −5dBs at a load impedance 47 kΩ
  Load impedance More than 10 kΩ
- XLR-3-32 type (balanced) × 2
  Rated output level
  +4dBs at a load impedance 10 kΩ
  Load impedance More than 600 Ω

Headphones
- Stereo phono jack × 1
  Output 0 – 50mW at a load impedance 8 Ω

Remote connector: 25-pin D-SUB type × 1

General

Power requirements: 230 V AC, 50/60 Hz

Power consumption: 22 W

Dimensions: Approx. 482 × 132 × 300 mm (w/h/d)
(19 × 5 1/4 × 11 7/8 inches)

Mass: Approx. 7.5 kg (16 lb 9 oz)

Supplied accessory: AC power cord (1)

Design and specifications are subject to change without notice.

STEREO CASSETTE DECK

SONY®

SERVICE MANUAL
SEC

TABLE OF CONTENTS

Section	*Title*	*Page*
1.	**GENERAL**	
	Location and Function Controls	3
2.	**ADJUSTMENTS**	4
3.	**DIAGRAMS**	
3-1.	Block Diagram	8
3-2.	Frame Schematic Diagram	11
3-3.	Printed Wiring Boards	16
3-4.	Main Section Schematic Diagrams	21
3-5.	Disply Section Schematic Diagram	26
3-6.	MD Section Schematic Diagram	28
3-7.	Terminal I/O Section Schematic Diagram	31
3-8.	Terminal I/O Section Schematic Diagram	33
3-9.	IC Pin Functions	38
4.	**EXPLODED VIEWS**	39
5.	**ELECTRICAL PARTS LIST**	44

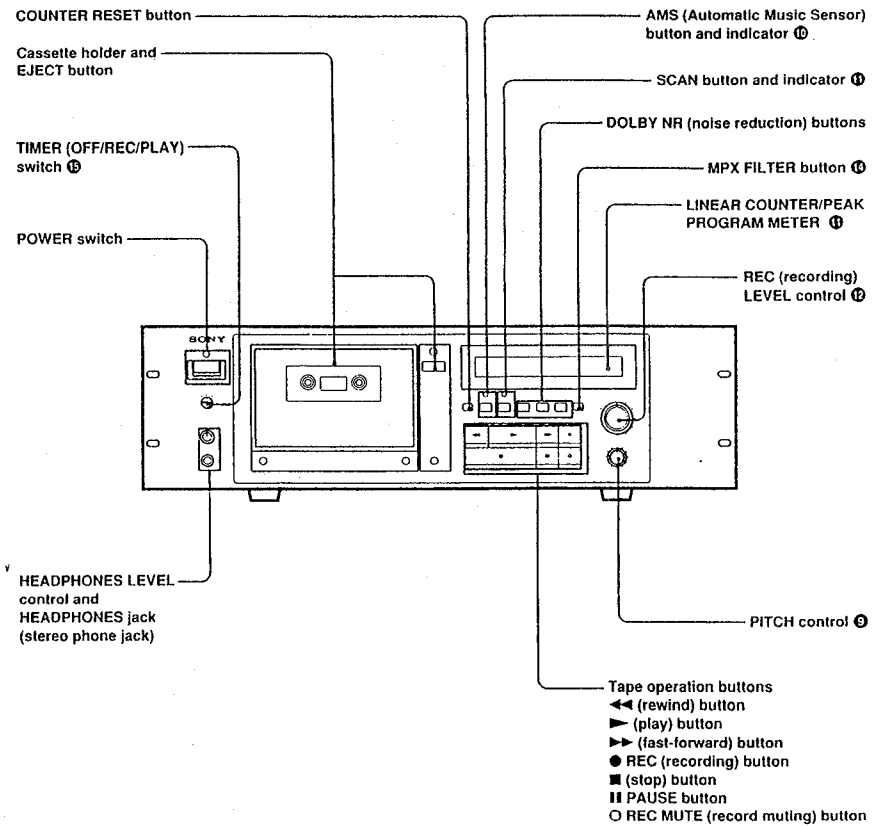
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

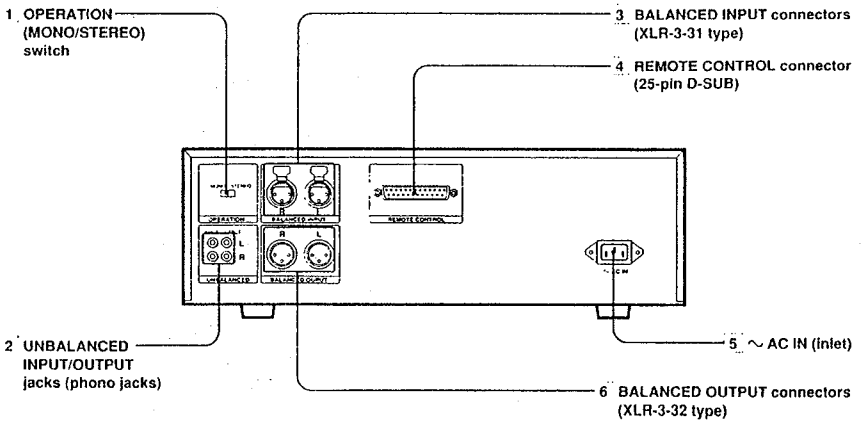
Location and Function of Controls

Refer to the pages indicated in ● for details.

Front Panel


COUNTER RESET button
Cassette holder and EJECT button
TIMER (OFF/REC/PLAY) switch ⓯
POWER switch
HEADPHONES LEVEL control and HEADPHONES jack (stereo phone jack)
AMS (Automatic Music Sensor) button and indicator ⓭
SCAN button and indicator ⓫
DOLBY NR (noise reduction) buttons
MPX FILTER button ⓮
LINEAR COUNTER/PEAK PROGRAM METER ⓫
REC (recording) LEVEL control ⓬
PITCH control ❾
Tape operation buttons
◀◀ (rewind) button
► (play) button
▶▶ (fast-forward) button
● REC (recording) button
■ (stop) button
II PAUSE button
O REC MUTE (record muting) button

Rear Panel


1 OPERATION (MONO/STEREO) switch
2 UNBALANCED INPUT/OUTPUT jacks (phono jacks)
3 BALANCED INPUT connectors (XLR-3-31 type)
4 REMOTE CONTROL connector (25-pin D-SUB)
5 ~ AC IN (inlet)
6 BALANCED OUTPUT connectors (XLR-3-32 type)

1 OPERATION (MONO/STEREO) switch
To make the unit feed out a monaural signal, set this switch to MONO. The same signal (a mixture of the signal from the L and R channels) comes out from the L and R channels of the UNBALANCED OUTPUT jacks and the BALANCED OUTPUT connectors.

4 REMOTE CONTROL connector (25-pin D-SUB)
When you connect this connector to the PIO connector of the SRP-C5000 System Controller, you can control this unit remotely by programming the function of the buttons and switches of the unit on the SRP-C5000. (See page 16.)

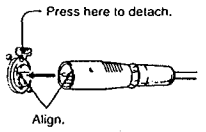
Note
Turn off the power to all equipment to be connected before making any connection.

2 UNBALANCED INPUT/OUTPUT jacks (phono jacks)
3 BALANCED INPUT connectors (XLR-3-31 type)
6 BALANCED OUTPUT connectors (XLR-3-32 type)

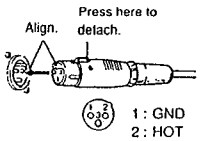
Connect a mixer, preamplifier, etc., to the above jacks and connectors.
If you connect the equipment to the UNBALANCED INPUT jacks and BALANCED INPUT connectors at the same time, this unit will record or feed out the mixed signal.
Be careful to make connections so that the signal sent from the unit will not enter the unit again.

The pin alignment of the XLR type connectors of the unit is as follows:

XLR-3-12C type



XLR-3-11C type



1 : GND
2 : HOT
3 : COLD

SECTION 1
GENERAL

This section is extracted from instruction manual.

SECTION 2
ADJUSTMENTS

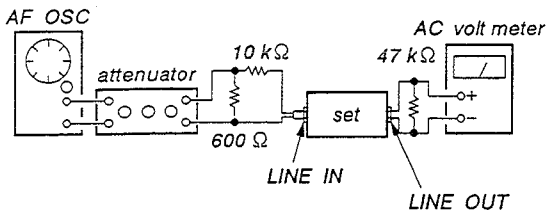
PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab.
   record/playback head pinch rollers
   erase head capstans
2. Demagnetize the record/playback head with a head demaghetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

1. The adjustments should be performed in the order given (Generally, playback circuit adjustments should be complated before performing recording circuit adjustmnets.)
2. The adjustments and the measurement should be performed for each channel unless otherwise noted.
3. The line output should be the output of pin jack for the adjustment.

- Positions of switches
  DOLBY NR switch : OFF
  TIMER switch : OFF
- Standard recording position
  Adjust the [REC LEVEL] control so that the following requlated input/output signal level are obtained.

– Record/playback mode –



Standard input level

Input pin	LINE IN
Signal source impedance	10 k Ω
Input signal level	0.25 V (– 10 dB)

Standard output level

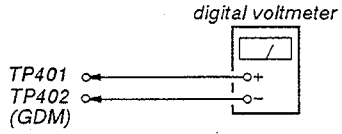
Output pin	LINE OUT
Load impedance	47 k Ω
Output signal level	0.44 V (– 5 dB)

Standard tape

Name	Signal	Used for
P-4-A100	10 kHz, – 10 dB	Vertical adjustment
WS-48B	3 kHz, 0 dB	Tape speed adjustment
P-4-L300	315 kHz, 0 dB	Level adjustment
P-4-D400	400 kHz, 0 dB	DOLBY level adjustment

[Torque system standard voltage adjustment]

Procedure :



1. Turn the [POWER] switch on with pressing [REC MUTE].
2. Adjust RV401 so that the voltage of TP401 (+) and TP402 (GND) should be 3.6 ± 0.5 V.
3. Turn the [POWER] switch on again after the adjustment

See page 7 for the adjustment location.

[Torque Adjustment]

1. Playback the Torque measurement tape.
2. Adjust so that the value of the meter meets the specifications below.

Specification :

Torque	Test tape	Meter reading	Adjustment part
FWD	CQ102C	45 ± 2 gcm	RV403
FWD Back tension	CQ102C	3 ± 1 gcm	RV404
FF	CQ201B	65 ± 5 gcm	RV402
REW	CQ201B	65 ± 5 gcm	RV405

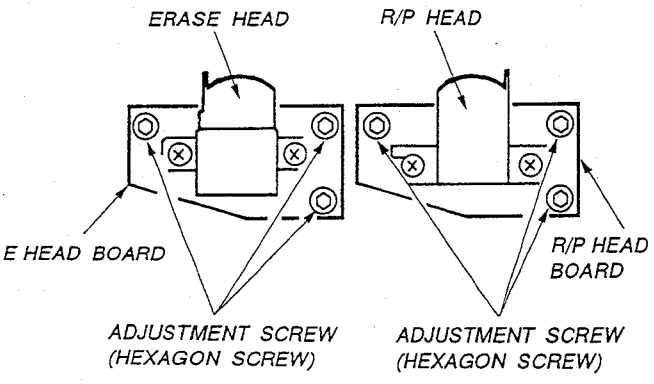
[Record/playback/erase head adjustment]

Precedure :

1. Perform the vertical/height/drive adjustment with a hexagon adjustment screw, checking that the transmit system with a mirror cassette.
2. The erase head should be parallel to the tape.

Caution : Do not turn the adjustment screw unless it is necessary. When the adjustment is needed, adjust based with either E head board or R/P head board and do not turn both the adjustment screw at the same time.

Adjustment location

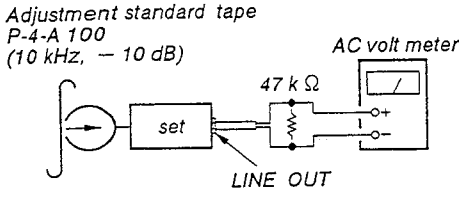


[Record/playback /erase head adjustment]

Procedure :

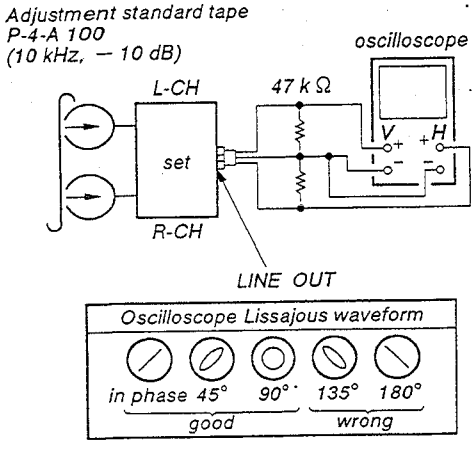
1. Level adjustment

– Playback mode –



2. Turn the adjustment screw so that the output of L-CH and R-CH should be maximum. (See page 4)
3. Phase check

– Playback mode –



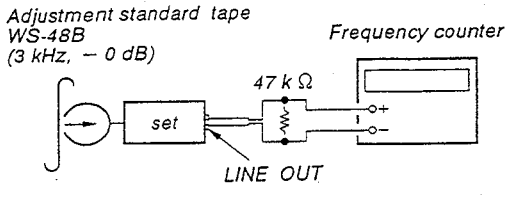
4. Check that the phase difference between L-CH and R-CH is within phase 90 °

[Tape speed adjustment]

Setting : PITCH control knob is at the center

Procedure :

– Playback mode –

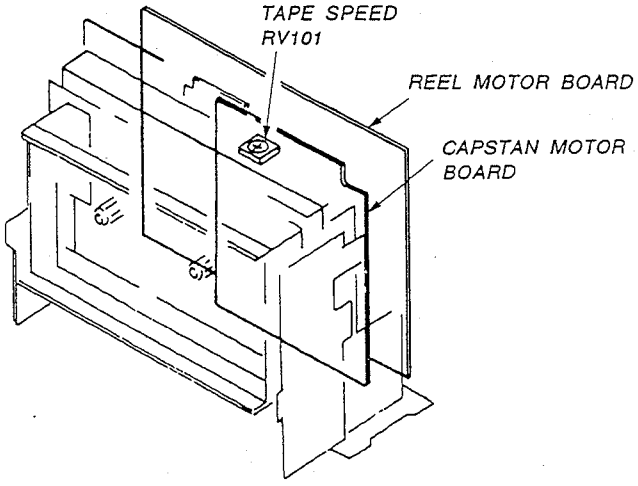


1. Adjust RV101 of MD part so that the frequency counter reads 3,000 $^{+}_{-}$ Hz
2. Frequency difference between FWD and REV should be within 0.06%.

Specification : 3,000 $^{+}_{-}$ Hz

Adjustment location

MD part

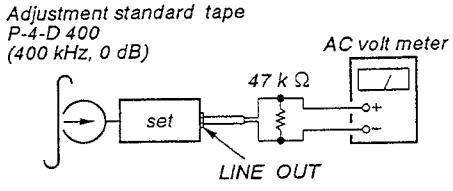


[Playback level adjustment]

Setting : DOLBY ON

Procedure :

– Playback mode –



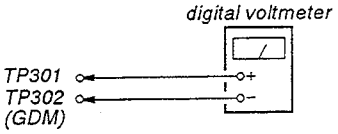
1. Set the standard tape (P-4-D400 : DOLBY-LEVEL) to adjust RV101 (L-CH) and RV101 (R-CH) so that the line out level should be – 2.3 ± 0.5 dB.
2. Check that the output level does not change while changing the mode from playback to stop serveral times.

See page 7 for adjustment location

[Bias Oscillator Frequency adjustment]

Setting : REC → Pause mode

Procedure :



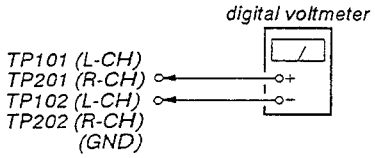
1. Set a blank tape (TYPE I : CS-122) to adjust the voltage of TP301 (+) and TP302 (GND) should be 80 ± 10 mV and adjust L301 so that the oscillator frequency should be 85 ± 1 kHz.

See page 7 for adjustment location

[Bias consumption current adjustment]

Caution : The bias consumption current adjustment should be performed before the record bias adjustment. After the bias consumption current adjustment, repeat the record bias adjustment.

Setting : REC → PAUSE mode
Procedure : Digital volt meter



1. Set a blank tape (TYPE II : CS-222) to adjust RV103 (L-CH) so that the voltage of TP101 (CL-CH) should be 5.5 mV.
2. Adjust RV203 (R-CH) so that the voltage of TP201 (R-CH) should be 5.5 mV as step1.
3. Turn the tape detective switch on with a finger (TYPE I mode) to adjust as shown above and adjust RV103 and RV203 so that the voltage of TP101 and TP202 should be 4 ± 0.5 mV.

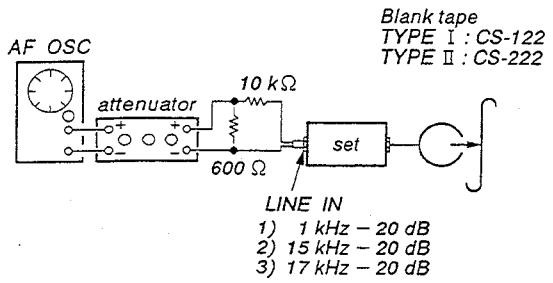
Specification:

Blank tape	Voltage
TYPE I (CS-122)	4 ± 0.5 mV
TYPE II (CS-222)	5.5 mV

[Record Bias adjustment]

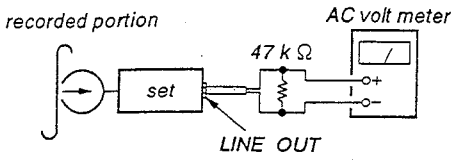
Setting : REC Level control should be standard record (See page 4).

Procedure :
– Record mode –



1. Set a blank tape to record each signal.

– Playback mode –



2. Play back the signal recorded in step1. confirm that signal level is within the specification below. If necessary, adjust RV103 (L-CH), RV203 (R-CH) and repeat the step 1 and 2.

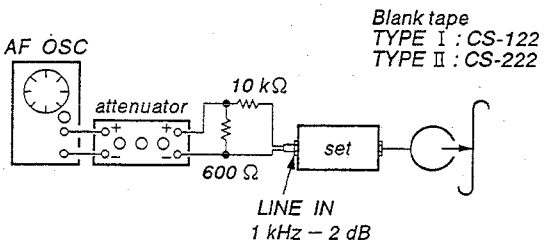
Caution : After adjusting TYPE II (RV103, 203), adjust TYPE I (RV301).

Specification : To the playback output of 1 kHz:
Playback output of 15 kHz:
Playback output of 17 kHz:

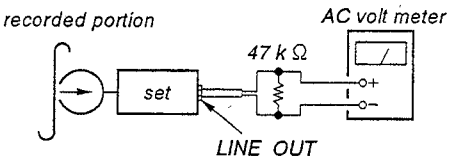
[Record level adjustment]

Setting : REC Level control should be standard record (See page 4.)

Procedure :
– Record mode –



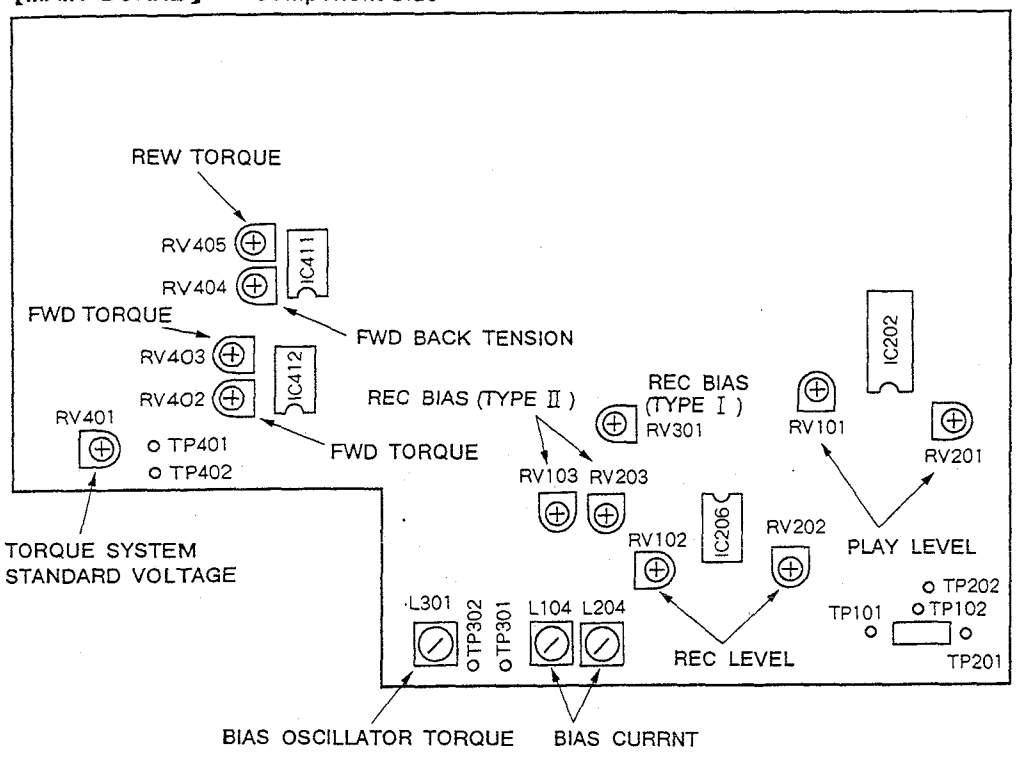
– Playback mode –



1. Set a blank tape to record each signal.
2. Playback the signal recorded in step1. Confirm that the signal level is – 5 ± 0.5 dB.
   If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the step land2.

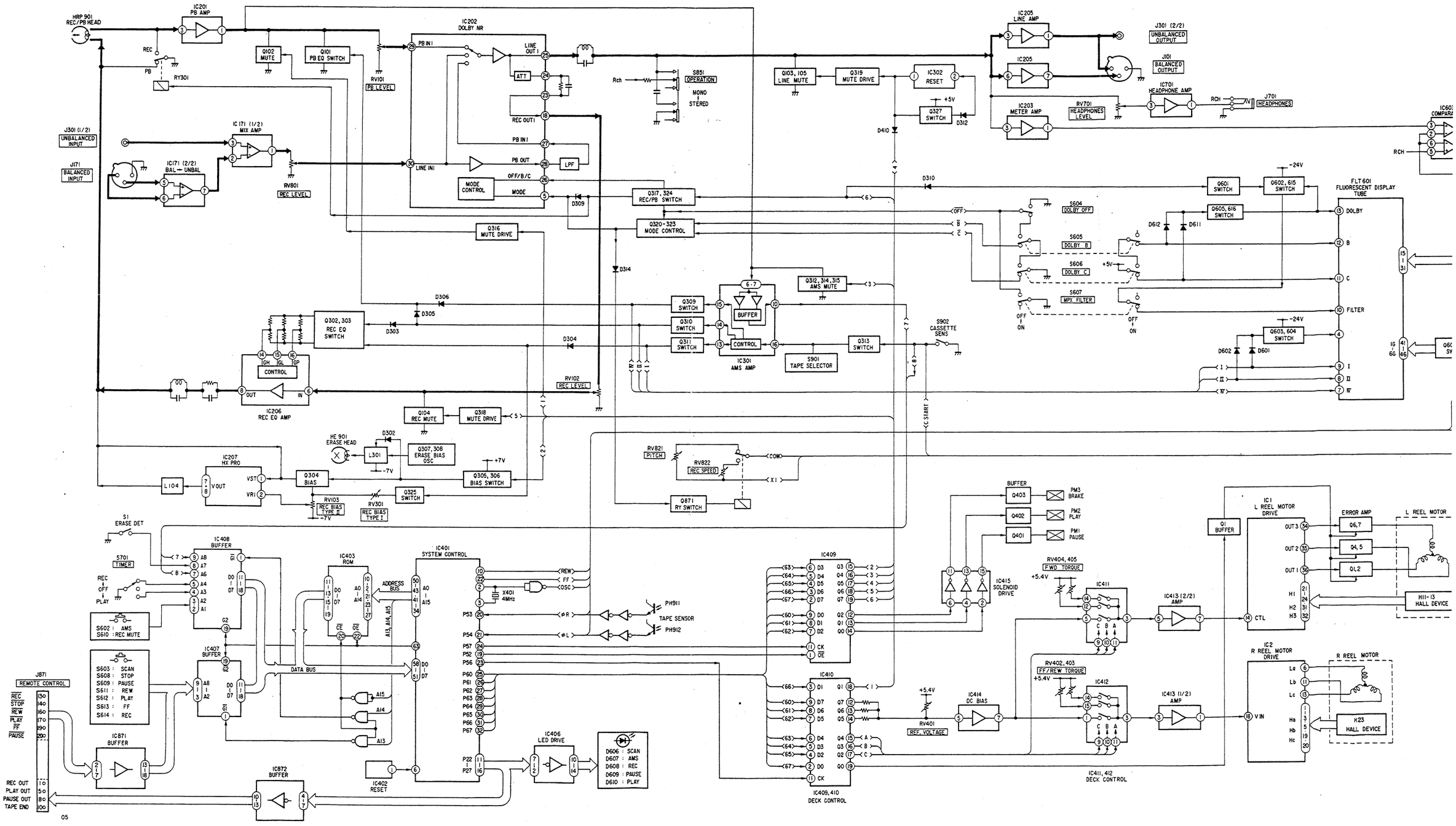
Specification : – 5 ± 1.5 dB

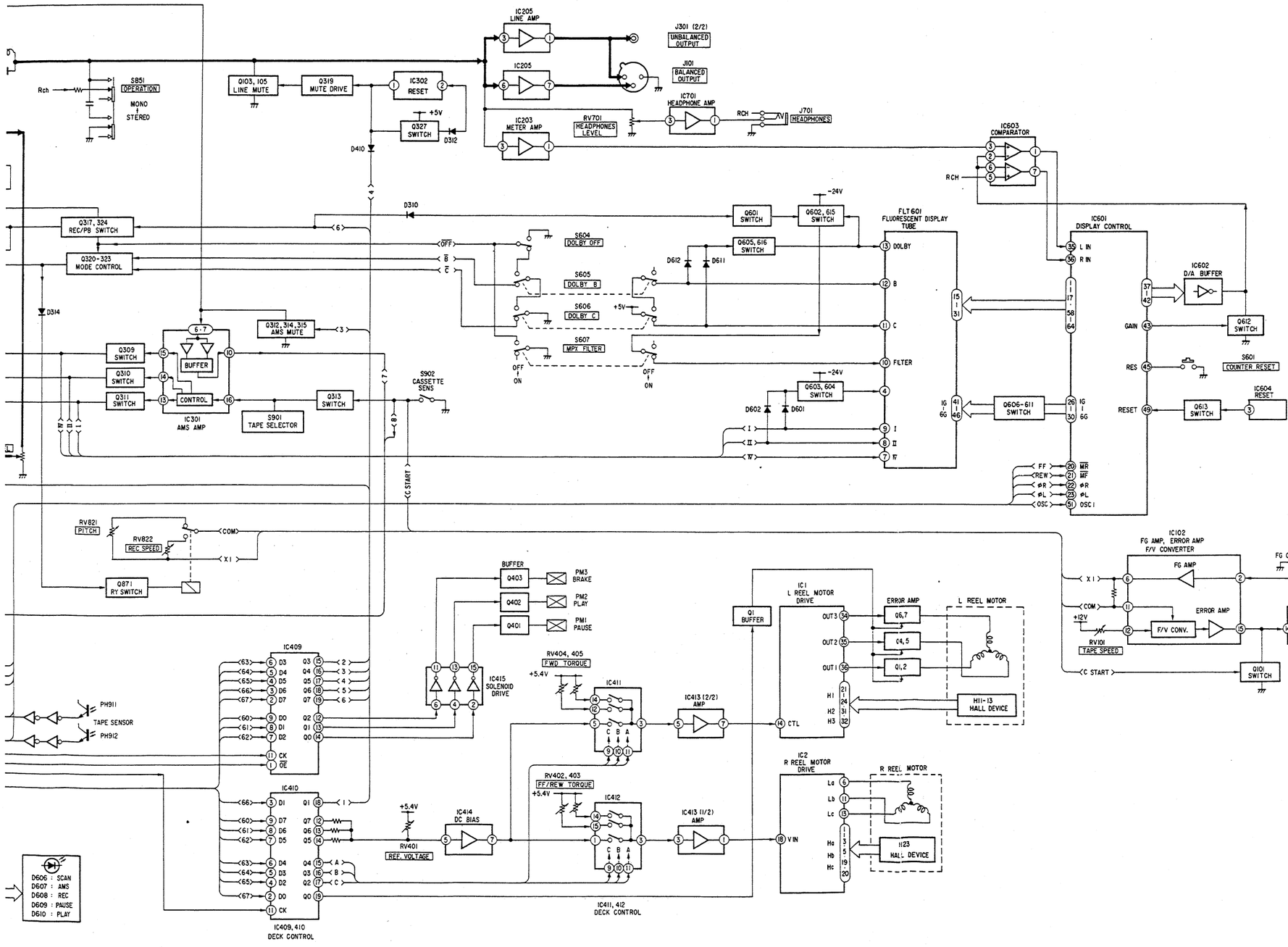
【MAIN BOARD】 – Component Side –



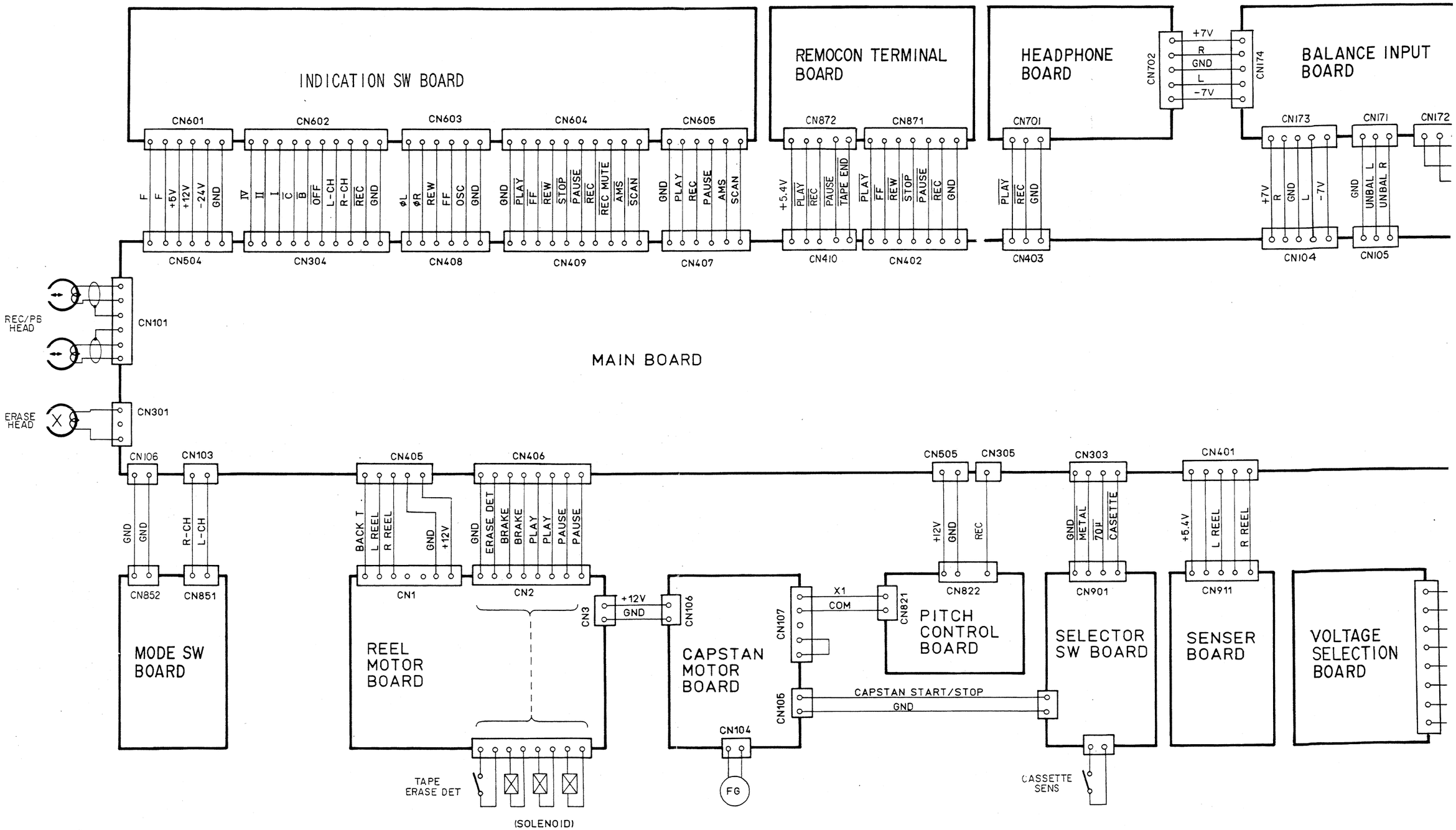
SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM

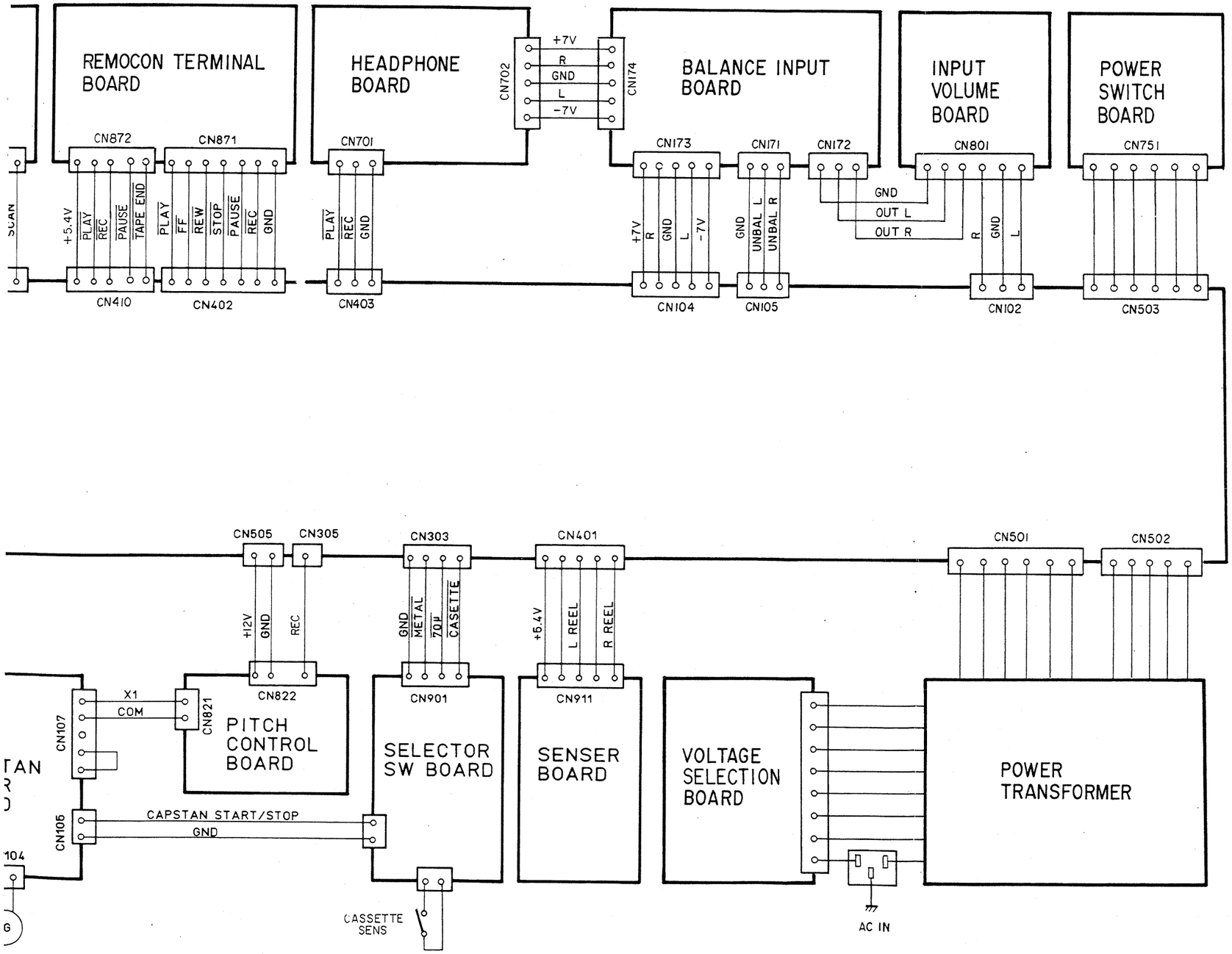



Rch
S851 OPERATION MONO STEREO
Q103, 105 LINE MUTE
Q319 MUTE DRIVE
IC302 RESET
+5V
Q327 SWITCH
D312
D410
IC205 LINE AMP
IC205
IC203 METER AMP
J301 (2/21) UNBALANCED OUTPUT
JI01 BALANCED OUTPUT
IC701 HEADPHONE AMP
RV701 HEADPHONES LEVEL
RCH
J701 HEADPHONES
IC603 COMPARATOR
RCH
-24V
Q601 SWITCH
Q602, 615 SWITCH
Q605, 616 SWITCH
D612
D611
S604 DOLBY OFF
S605 DOLBY B
S606 DOLBY C
S607 MPX FILTER
OFF ON
FLT 601 FLUORESCENT DISPLAY TUBE
DOLBY
B
C
FILTER
I
II
IV
IC601 DISPLAY CONTROL
L IN
R IN
IC602 D/A BUFFER
GAIN
Q612 SWITCH
RES
S601 COUNTER RESET
RESET
Q613 SWITCH
IC604 RESET
Q606-611 SWITCH
D602
D601
Q603, 604 SWITCH
FF
REW
ΦR
ΦL
OSC
Q317, 324 REC/PB SWITCH
Q320-323 MODE CONTROL
D314
Q309 SWITCH
Q310 SWITCH
Q311 SWITCH
BUFFER
CONTROL
IC301 AMS AMP
S901 TAPE SELECTOR
Q313 SWITCH
S902 CASSETTE SENS
D310
6-7
Q312, 314, 315 AMS MUTE
C START
RV821 PITCH
RV822 REC SPEED
COM
X I
Q871 RY SWITCH
BUFFER
Q403
Q402
Q401
PM3 BRAKE
PM2 PLAY
PM1 PAUSE
IC415 SOLENOID DRIVE
IC409
IC410
PH911
PH912
TAPE SENSOR
RV404, 405 FWD TORQUE
+5.4V
IC411
IC413 (2/2) AMP
RV402, 403 FF/REW TORQUE
IC412
IC413 (1/2) AMP
IC414 DC BIAS
RV401 REF. VOLTAGE
Q1 BUFFER
IC1 L REEL MOTOR DRIVE
ERROR AMP
Q6,7
Q4,5
Q1,2
L REEL MOTOR
H11-13 HALL DEVICE
IC2 R REEL MOTOR DRIVE
R REEL MOTOR
1123 HALL DEVICE
D606 : SCAN
D607 : AMS
D608 : REC
D609 : PAUSE
D610 : PLAY
IC409, 410 DECK CONTROL
IC411, 412 DECK CONTROL
+10V
+5V
+5.4V
+6V
D505
D504
D751 POWER
D503
Q507, 508 +6V REG
+12V
Q509, 510 +12V REG
Q514 SWITCH
+7V
Q501, 502, 506 +7V REG
-7V
Q503-505 -7V REG
Q513 SWITCH
DB502
DB501
CN901 ~AC IN
S751 POWER
ON OFF
-24V
F
D508
Q511, 512 REG
D509
D510
+29V
T901 POWER TRANSFORMER
IC102 FG AMP, ERROR AMP F/V CONVERTER
FG AMP
FG COIL
ERROR AMP
F/V CONV.
+12V
RV101 TAPE SPEED
C START
Q101 SWITCH
CAPSTAN MOTOR
HALL DEVICE
IC101 CAPSTAN MOTOR DRIVE

3-2. FRAME SCHEMATIC DIAGRAM

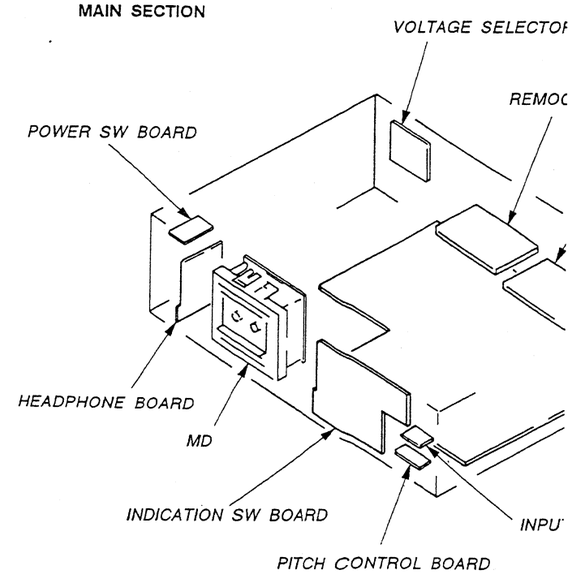


05

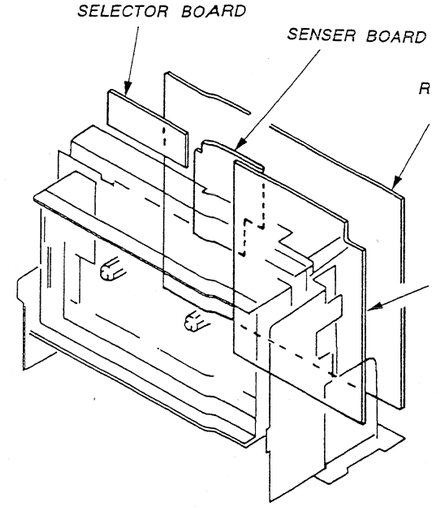


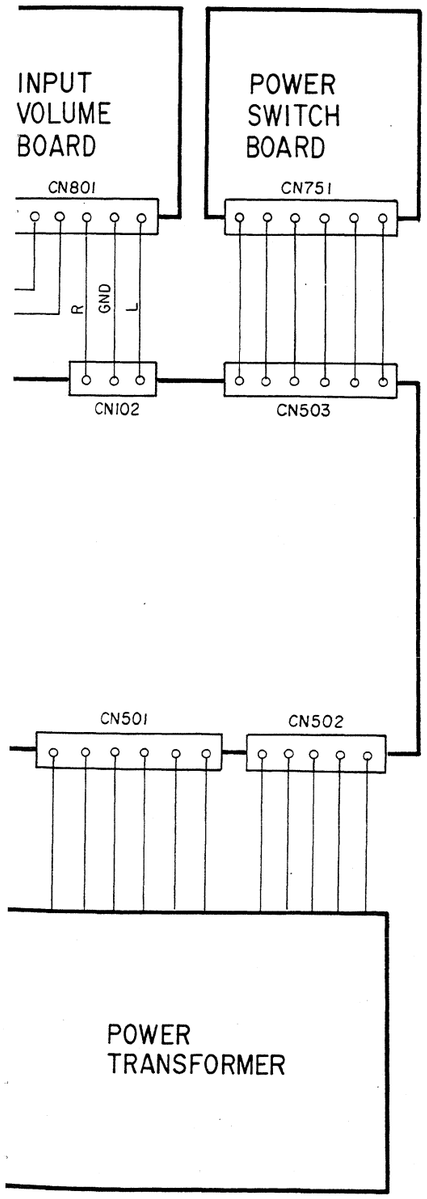
• Circuit Boards Location

MAIN SECTION



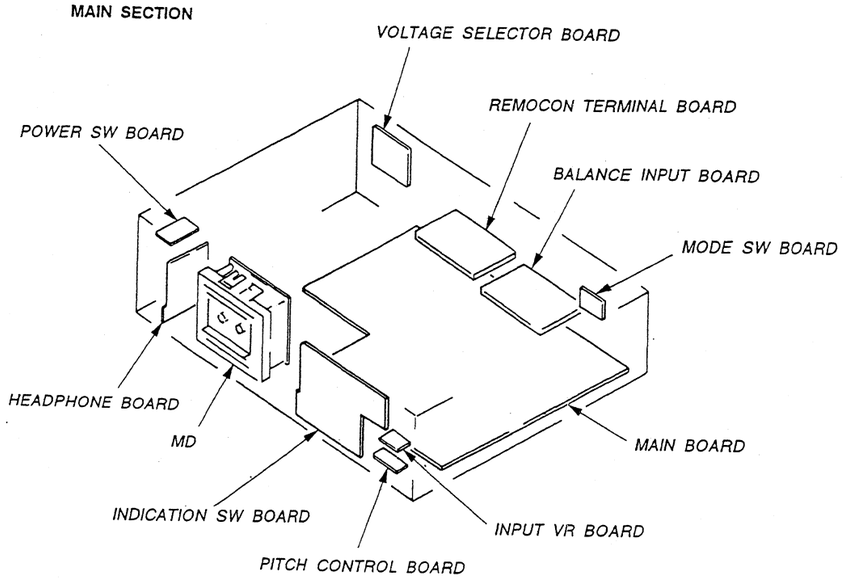
MD SECTION



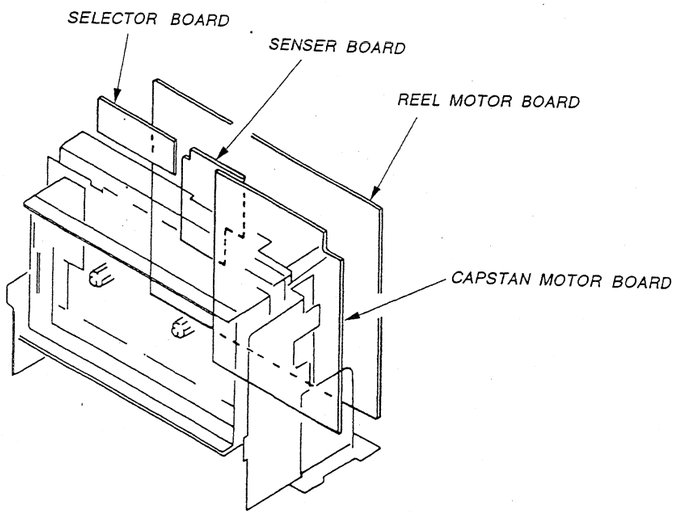


• Circuit Boards Location

MAIN SECTION

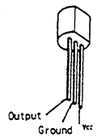


MD SECTION



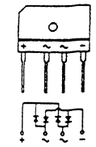
• Semiconductor Lead Layouts

PST520C-2

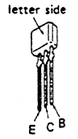


2SC3330-T
2SC3623-L
2SC4121
DTA114ES
DTC114ES
RN1211

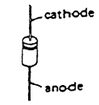
RBA-402



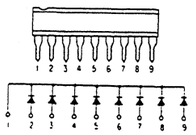
2SA1175-HFE
2SC2785-HFE



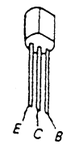
S5688B
1SS176
10E2



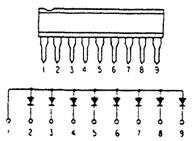
DAN803



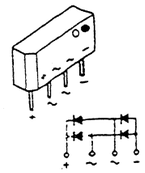
2SA1409-K
2SB1116A-K
2SC2878-AB



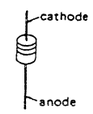
DAP803



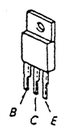
1B4B41



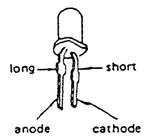
HZS5.6JB2
HZS7.5JB2
HZS13JB2



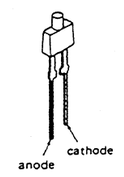
2SB1094-LK
2SD1585-LK



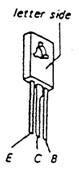
TLG124A
TLO124



LN222RP-LS



2SB1151



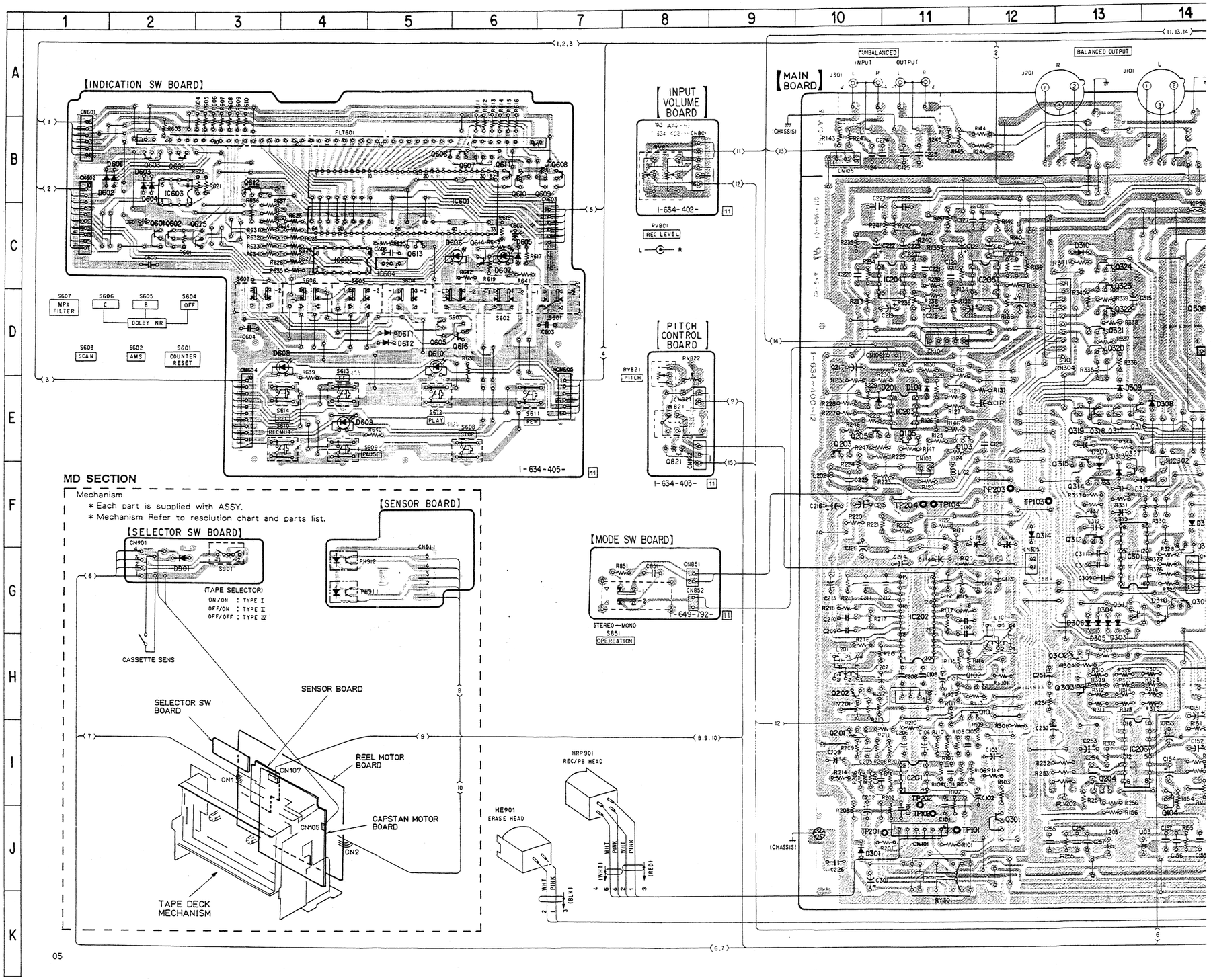
• Semiconductor Location

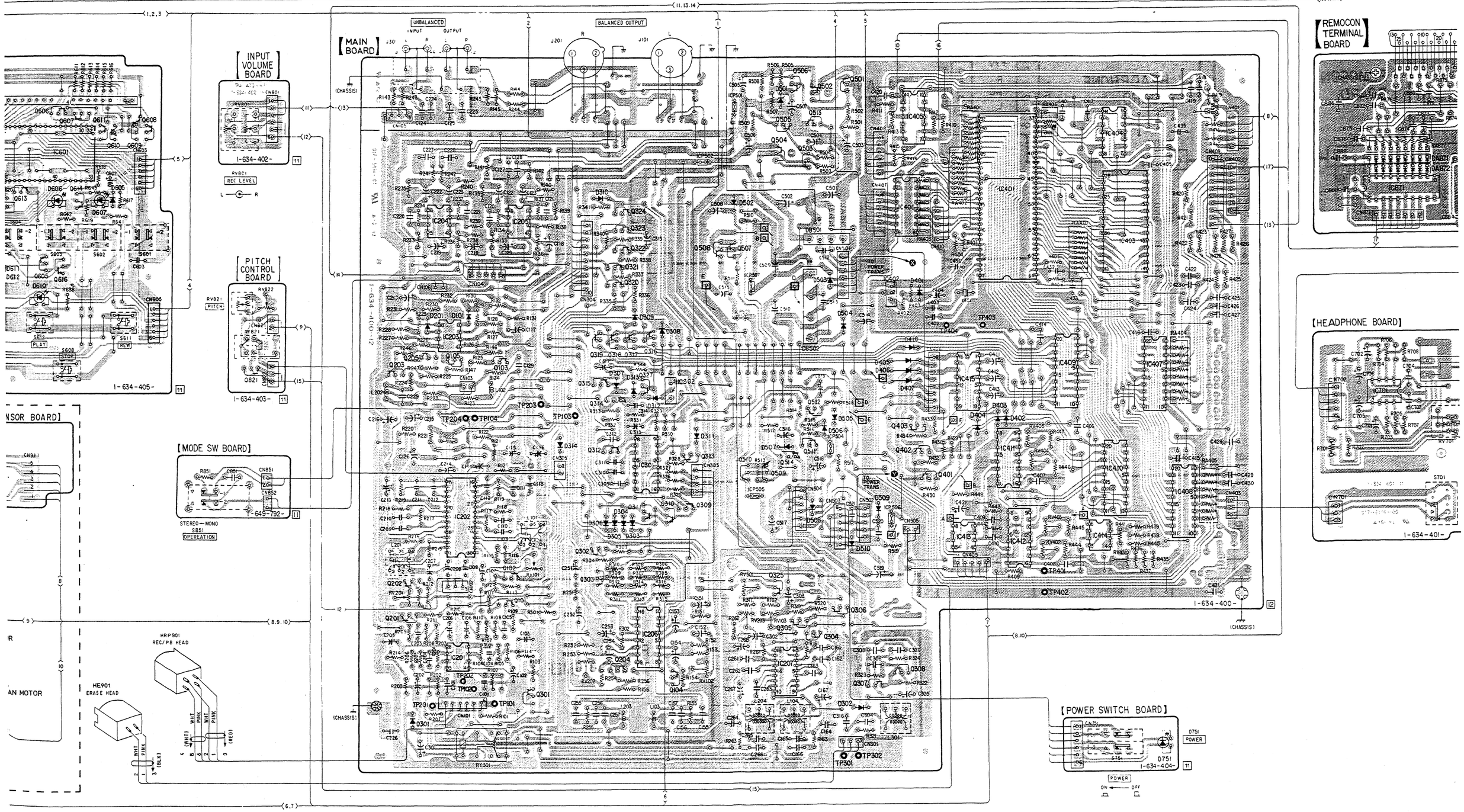
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	E-11	DB502	E-16	Q308	J-17
D201	E-11			Q309	G-14
D301	J-10	IC171	C-29	Q310	G-14
D302	J-16	IC201	I-11	Q311	G-13
D303	H-13	IC202	G-11	Q312	G-13
D304	H-13	IC203	E-11	Q313	G-14
D305	H-13	IC204	D-11	Q314	F-13
D306	H-13	IC205	D-12	Q315	F-13
D307	F-13	IC206	I-13	Q316	E-13
D308	E-14	IC207	I-15	Q317	E-13
D309	E-13	IC271	C-27	Q318	E-13
D310	C-13	IC301	G-13	Q319	E-13
D311	F-14	IC302	F-14	Q320	D-13
D312	F-13	IC401	D-18	Q321	D-13
D313	F-13	IC402	D-17	Q322	D-13
D314	G-12	IC403	D-20	Q323	D-13
D401	D-17	IC404	B-18	Q324	C-13
D402	F-18	IC405	B-17	Q325	H-15
D403	F-18	IC406	C-17	Q327	F-13
D404	F-18	IC407	F-20	Q401	G-17
D405	E-17	IC408	G-20	Q402	G-17
D406	F-17	IC409	E-19	Q403	F-17
D407	F-17	IC410	G-20	Q501	B-16
D410	E-17	IC411	G-18	Q502	B-16
D501	B-15	IC412	H-18	Q503	C-15
D502	C-15	IC413	H-18	Q504	C-15
D503	D-16	IC414	H-19	Q505	B-15
D504	E-16	IC415	F-18	Q506	B-15
D505	F-16	IC601	C-6	Q507	D-15
D506	F-16	IC602	C-4	Q508	D-14
D507	G-15	IC603	C-2	Q509	G-15
D508	G-16	IC604	C-5	Q510	G-15
D509	G-16	IC701	F-23	Q511	F-16
D510	H-16	IC871	C-23	Q512	F-16
D601	B-2	IC872	C-25	Q513	B-16
D602	B-2			Q514	C-15
D603	B-2	Q101	I-12	Q601	C-2
D604	C-2	Q102	H-12	Q602	C-2
D605	C-6	Q103	E-11	Q603	B-2
D606	C-6	Q104	J-14	Q604	B-2
D607	C-6	Q105	E-11	Q605	D-6
D608	E-4	Q201	I-10	Q606	B-5
D609	E-4	Q202	H-10	Q607	B-6
D610	E-6	Q203	F-10	Q608	B-7
D611	D-5	Q204	I-13	Q609	B-7
D612	D-5	Q205	E-10	Q610	C-6
D751	K-20	Q301	J-12	Q611	B-6
D871	B-25	Q302	H-13	Q612	C-3
D872	B-25	Q303	H-13	Q613	C-5
D873	B-25	Q304	I-16	Q614	C-6
D874	B-25	Q305	I-15	Q615	C-3
D901	G-2	Q306	I-16	Q616	D-6
DB501	D-16	Q307	J-16	Q821	F-8

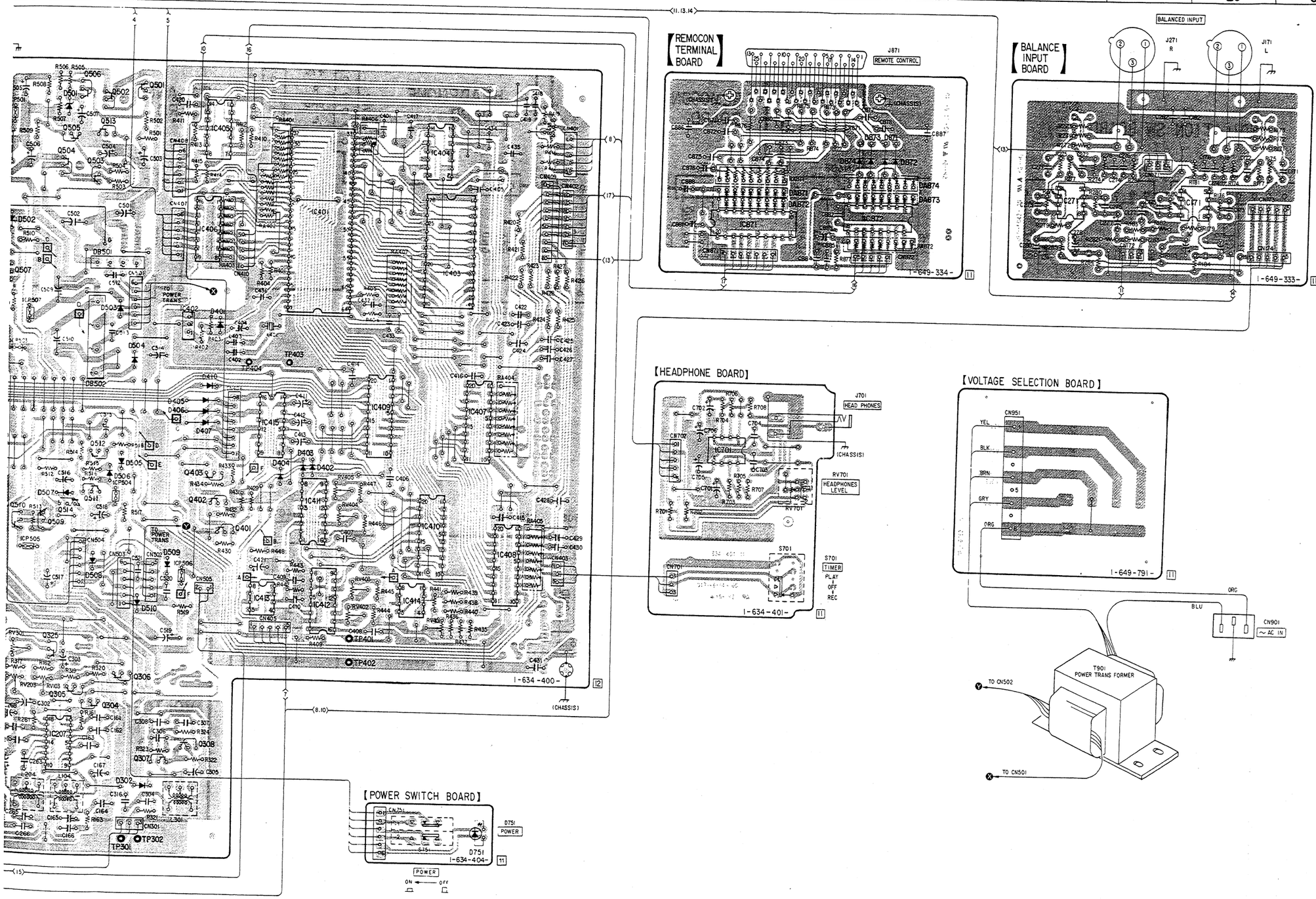
Note:

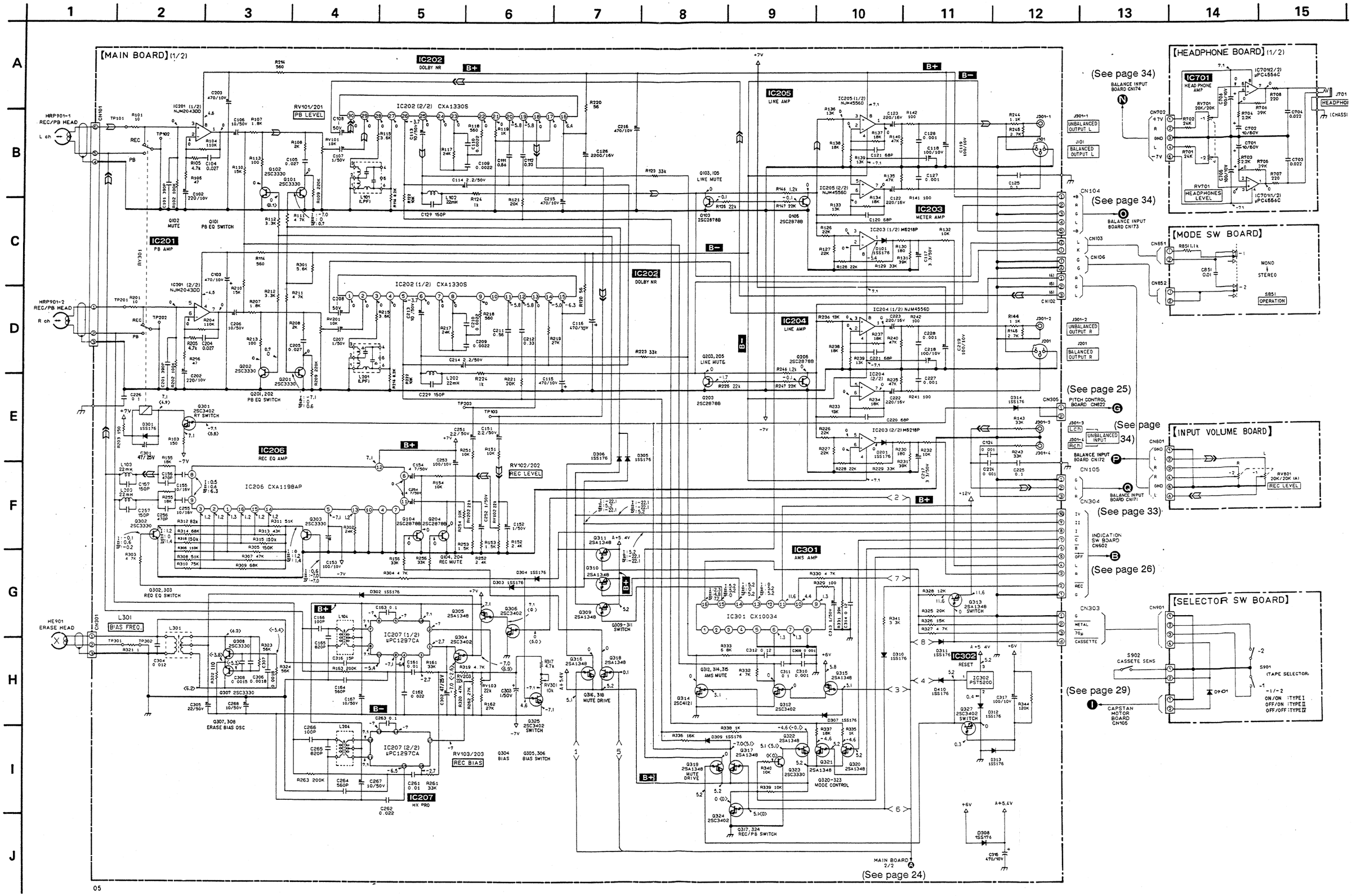
- ○——— : parts extracted from the component side.
- ▒▒▒ : Pattern of the rear side.

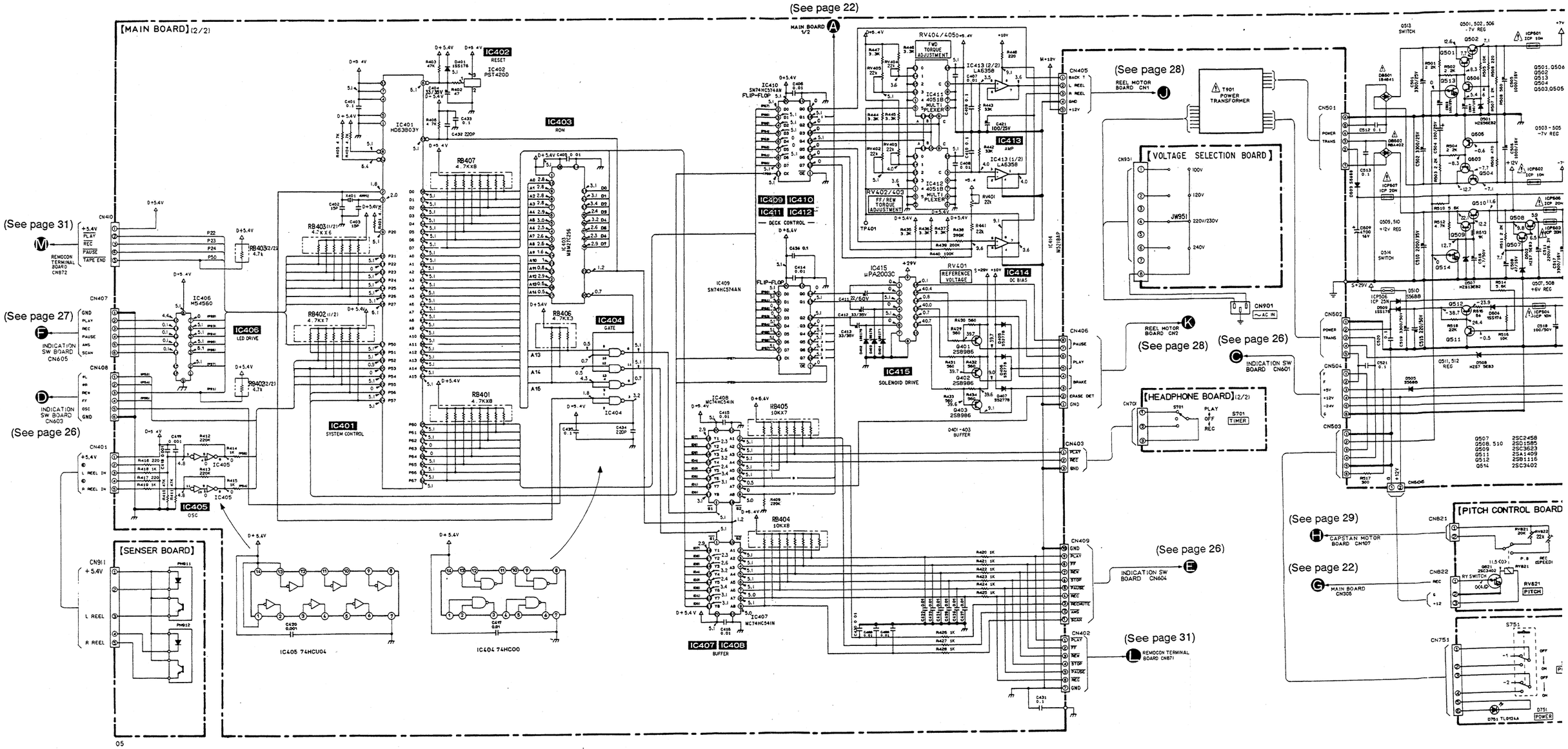
3-3. PRINTED WIRING BOARDS




【MAIN BOARD】
UNBALANCED
INPUT
OUTPUT
BALANCED OUTPUT
J201
J101
【INPUT VOLUME BOARD】
I-634-402-
REC LEVEL
【PITCH CONTROL BOARD】
I-634-403-
【MODE SW BOARD】
I-649-792-
STEREO — MONO
SB51
OPEREATION
【REMOCON TERMINAL BOARD】
I-634-401-
【HEADPHONE BOARD】
I-634-405-
【POWER SWITCH BOARD】
I-634-404-
POWER
ON — OFF
HRP901
REC/PB HEAD
HE901
ERASE HEAD
WHT
PINK
(BLK)
(RED)
(WHT)
I-634-400-
(CHASSIS)
TP101
TP102
TP103
TP104
TP201
TP202
TP203
TP204
TP301
TP302
TP401
TP402
TP403
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC401
IC402
IC403
IC404
IC405
IC406
IC407
IC408
IC409
IC410
IC411
IC412
IC413
IC414
IC415
IC501
IC502
IC503
IC504
IC505
IC506
IC507
IC601
Q201
Q202
Q203
Q204
Q205
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
Q315
Q316
Q317
Q318
Q319
Q320
Q321
Q322
Q323
Q324
Q325
Q326
Q327
Q401
Q402
Q403
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
Q512
Q513
Q514
Q515
Q516
Q517
Q518
Q519
Q520
Q521
Q522
Q523
Q524
Q525
Q526
Q527
Q528
Q529
Q530
Q531
Q532
Q533
Q534
Q535
Q536
Q537
Q538
Q539
Q540


【REMOCON TERMINAL BOARD】
J871
REMOTE CONTROL
1-649-334-
【BALANCE INPUT BOARD】
BALANCED INPUT
J271 R
J171 L
1-649-333-
【HEADPHONE BOARD】
J701
HEAD PHONES
RV701
HEADPHONES LEVEL
S701
TIMER
PLAY
OFF
REC
1-634-401-
【VOLTAGE SELECTION BOARD】
CN951
YEL
BLK
BRN
GRY
ORG
1-649-791-
ORG
BLU
CN901
~ AC IN
T901
POWER TRANS FORMER
TO CN502
TO CN501
【POWER SWITCH BOARD】
D751
POWER
1-634-404-
POWER
ON
OFF
1-634-400-
TP401
TP402
TP301
TP302
(CHASSIS)


[MAIN BOARD] (1/2)
IC201 PB AMP
IC202 DOLBY NR
IC203 METER AMP
IC204 LINE AMP
IC205 LINE AMP
IC206 REC EQ AMP
IC207 HX PRO
IC301 AMS AMP
IC302 RESET
B+
B-
HRP901-1 REC/PB HEAD L ch
HRP901-2 REC/PB HEAD R ch
HE901 ERASE HEAD
L301 BIAS FREQ.
RV101/201 PB LEVEL
RV102/202 REC LEVEL
RV301 BIAS
RV103/203 REC BIAS
Q101 PB EQ SWITCH
Q201, 202 PB EQ SWITCH
Q302, 303 REC EQ SWITCH
Q307, 308 ERASE BIAS OSC
Q309-311 SWITCH
Q312, 314, 315 AMS MUTE
Q316, 318 MUTE DRIVE
Q317, 324 REC/PB SWITCH
Q320-323 MODE CONTROL
Q325 BIAS SWITCH
Q103, 105 LINE MUTE
Q203, 205 LINE MUTE
Q104, 204 REC MUTE
Q102 MUTE
Q301 RY SWITCH
Q304 BIAS
IC202 (1/2) CXA1330S
IC202 (2/2) CXA1330S
IC206 CXA1198AP
IC207 (1/2) μPC1297CA
IC207 (2/2) μPC1297CA
IC301 CX10034
IC201 (1/2) NJM2043DD
IC201 (2/2) NJM2043DD
IC205 (1/2) NJM4556D
IC205 (2/2) NJM4556D
IC204 (1/2) NJM4556D
IC204 (2/2)
IC203 (1/2) M5218P
IC203 (2/2) M5218P
IC302 PST5200
Q101 1SS176
Q201 2SC3330
Q202 2SC3330
Q301 2SC3402
Q302 2SC3330
Q303 2SC3330
Q104 2SC2878B
Q204 2SC2878B
Q105 2SC2878B
Q203 2SC2878B
Q205 2SC2878B
Q308 2SC3330
Q306 2SC3402
Q304 2SC3402
Q305 2SA1348
Q309 2SA1348
Q310 2SA1348
Q315 2SA1348
Q316 2SA1348
Q318 2SA1348
Q319 2SA1348
Q321 2SA1348
Q322 2SA1348
Q312 2SC3402
Q313 2SA1348
Q314 2SC4121
Q323 2SC3330
Q324 2SC3402
Q327 2SC3402
D301 1SS176
D302 1SS176
D303 1SS176
D304 1SS176
D305 1SS176
D306 1SS176
D307 1SS176
D308 1SS176
D309 1SS176
D310 1SS176
D311 1SS176
D312 1SS176
D313 1SS176
D314 1SS176
D410 1SS176
D0101 1SS176
D0201 1SS176
D0105 2SC2878B
D0205 2SC2878B
CN101
CN102
CN103
CN104
CN105
CN106
CN301
CN303
CN304
CN305
CN602
J101 BALANCED OUTPUT L
J201 BALANCED OUTPUT R
J301-1 UNBALANCED OUTPUT L
J301-2 UNBALANCED OUTPUT R
J301-3 LCH UNBALANCED INPUT
J301-4 RCH UNBALANCED INPUT
J701 HEADPHONE
S851 OPERATION
S902 CASSETE SENS
S901 (TAPE SELECTOR)
ON/ON :TYPE I
OFF/ON :TYPE II
OFF/OFF :TYPE IV
[HEADPHONE BOARD] (1/2)
IC701 HEAD PHONE AMP
IC702(1/2) μPC4556C
IC702(2/2) μPC4556C
RV701 HEADPHONES LEVEL
[MODE SW BOARD]
MONO
STEREO
[INPUT VOLUME BOARD]
RV801 20K/20K (A) REC LEVEL
[SELECTOR SW BOARD]
CASSETTE METAL 70μ
(See page 34) BALANCE INPUT BOARD CN174
(See page 34) BALANCE INPUT BOARD CN173
(See page 25) PITCH CONTROL BOARD CN622
(See page 34) BALANCE INPUT BOARD CN172
(See page 33) BALANCE INPUT BOARD CN171
(See page 26) INDICATION SW BOARD CN602
(See page 29) CAPSTAN MOTOR BOARD CN105
(See page 24) MAIN BOARD 2/2



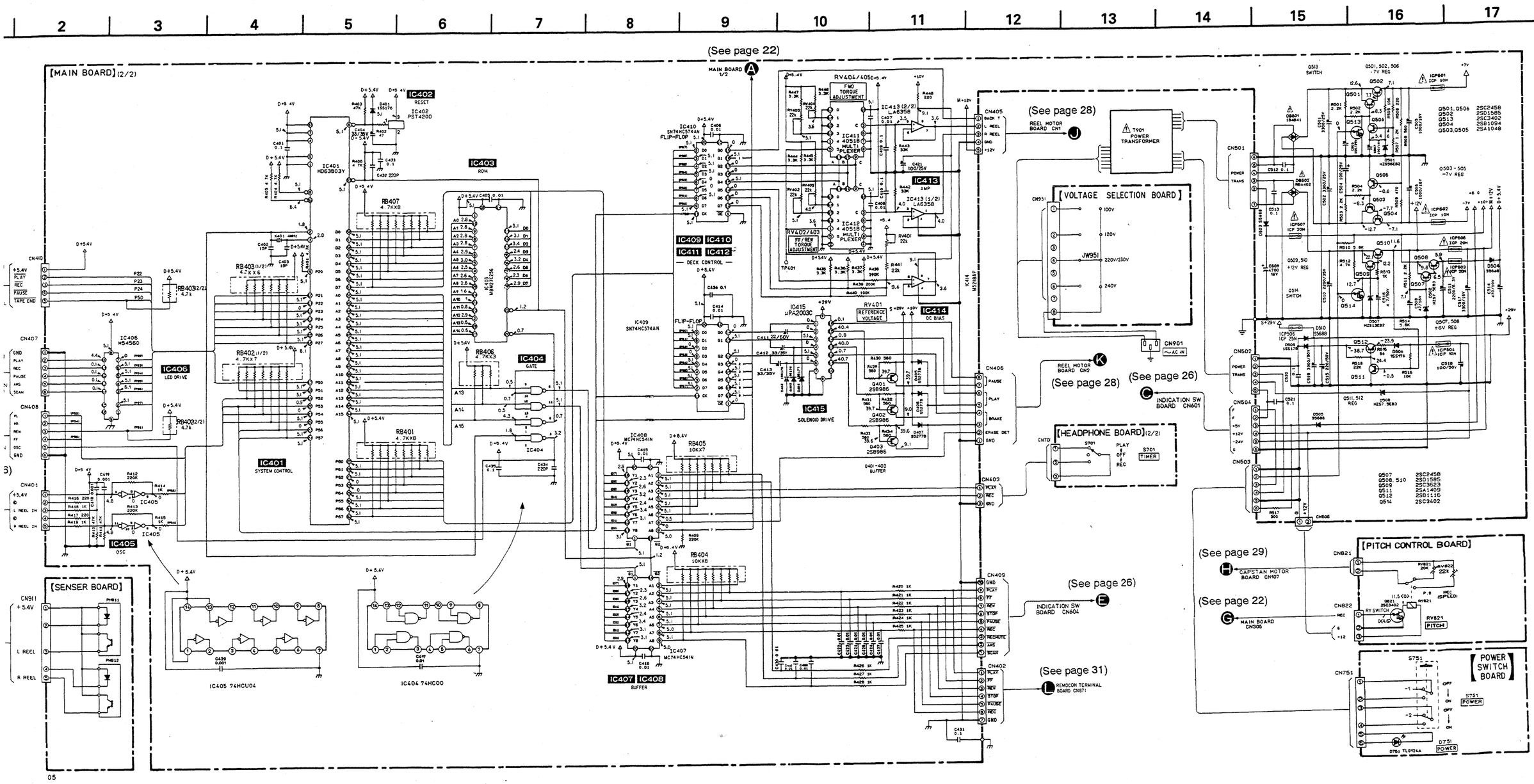
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B + Line.
- B− : B − Line.
- ▭ : adjustment for repair.

- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  < > : REC
  ✻ : Impossible to measure
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC



citors are in μF unless otherwise noted. pF: μμF
or less are not indicated except for electrolytics
alums.
tors are in Ω and ¼ W or less unless otherwise
.

e components identified by mark ⚠ or dotted line
h mark ⚠ are critical for safety.
place only with part number specified.

: B + Line.
: B − Line.
: adjustment for repair.

- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  < > : REC
  * : Impossible to measure
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ≫ : PB
  ≫ : REC

3-5. DISPLAY SECTION SCHEMATIC DIAGRAM

3-6. MD SECTION SCHEMATIC

[SWITCH INDICATION BOARD]

FLT601 FLUORESCENT DISPLAY TUBE

CN602

(See page 22) B MAIN BOARD 1/2 CN304

CN601

(See page 25) C MAIN BOARD 2/2 CN504

CN603

(See page 23) D MAIN BOARD 2/2 CN408

CN604

MAIN BOARD 2/2 CN409 (See page 25) E

CN605

MAIN BOARD 2/2 CN407 F

S606-1 DOLBY C

+5V S606-2

S605-1 DOLBY B

S605-2

S604-1 DOLBY OFF

S607-1 MPX Filter

Q605 2SA1348

D611 1SS176

D612 1SS176

D601 1SS176

D602 1SS176

Q606 2SA1348

Q607 2SA1348

Q608 2SA1348

Q609 2SA1348

Q610 2SA1348

Q611 2SA1348

R612 390K

R611 390K

R613 390K

R614 390K

R615 390K

R616 390K

Q606-611 SWITCH

Q601 2SA1348

Q602 2SC3402

Q615 2SA1348

Q603 2SC3402

Q604 2SA1348

Q616 2SC3402

R601 100K

R603 100K

R604 100K

R605 100K

R606 100K

R607 100K

R608 100K

R609 100K

R610 100K

Q601-605.615.616 DISPLAY CONTROL SWITCH

IC601 HD614042SAB7 DISPLAY SYSTEM CONTROL

IC601 DISPLAY CONTROL

IC602 HD14069UBP

IC604 PST-520D RESET

R617 47K

Q613 2SA1348

R618 47K

Q614 RN1211

C602 10/16V

R620 100K

R619 100K

R643 15K

D605 1SS176

Q613,614 SWITCH

C606 0.1

S601 COUNTER RESET

D603 1SS176

D604 1SS176

R621 4.7K

R622 4.7K

IC603 (2/2) NJM2903D

IC603 (1/2) NJM2903D

IC603 COMPARATOR

Q612 2SC3402 SWITCH

R636 1.5K

IC602 D/A BUFFER

R623 20K

R624 20K

R625 20K

R626 20K

R627 20K

R628 20K

R629 10K

R630 10K

R631 10K

R632 10K

R633 10K

R634 10K

R635 20K

R637 43K

C601 220/6.3V

C603 0.1

C604 0.1

C605 0.1

S612 PLAY

S613 FF

S611 REW

S608 STOP

S609 PAUSE

S614 REC

S610 RECMUTE

S602 AMS

S603 SCAN

D610 TLG220

D608 TLR220

D609 TLO220

D607 TLR220

D606 TLR220

R638 220

R639 220

R640 220

R641 390

R642 390

(See page 23)

05

(See page 25) K MAIN BOARD 2/2 CN406

CN2

TAPE ERASE.DET SW

SOL.C

SOL.B

SOL.A

CN4

(See page 25) J MAIN BOARD 2/2 CN405

CN1

BACK TENSION

L REEL CONTROL

R REEL CONTROL

L HALL OUT

R HALL OUT

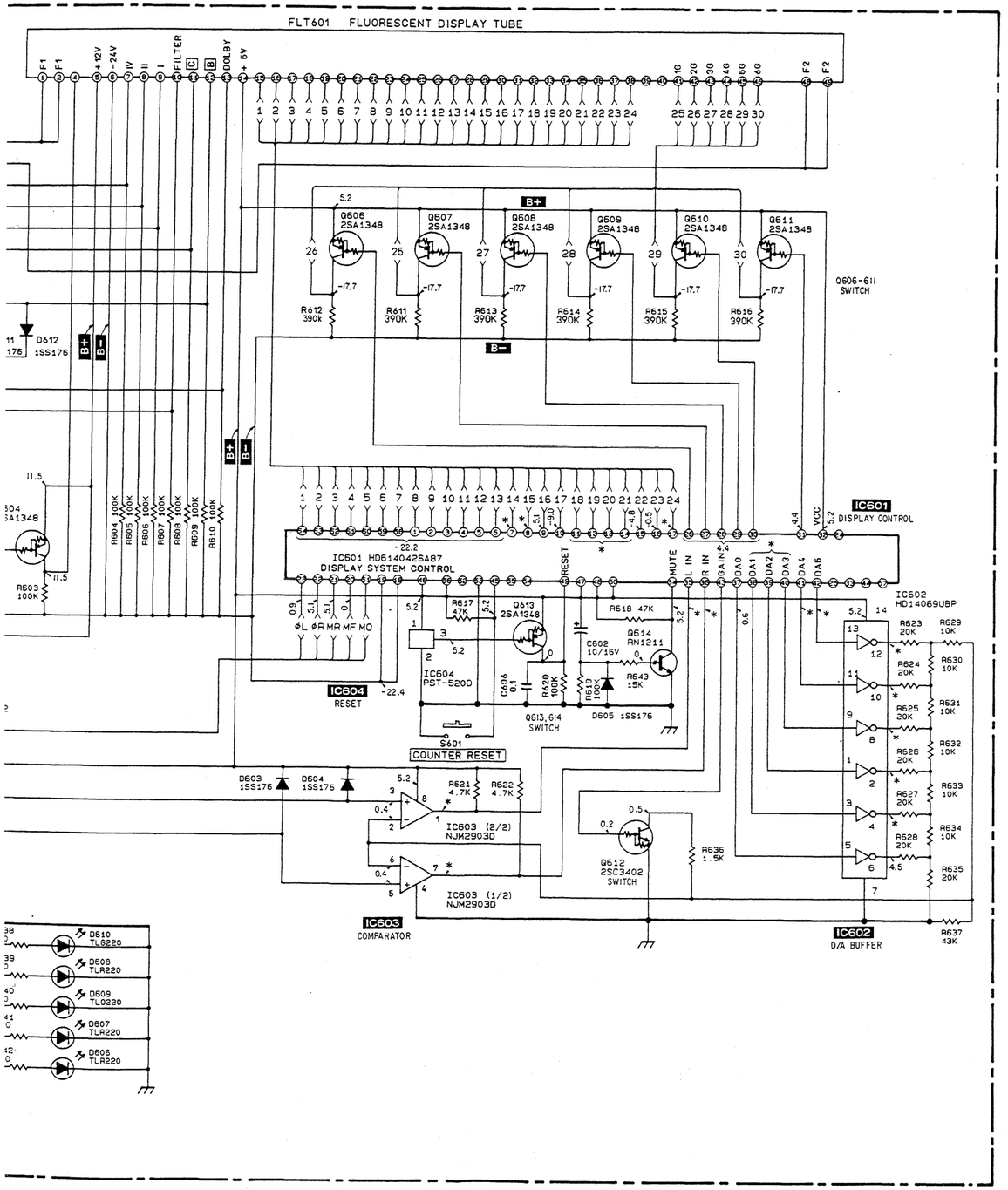
GND

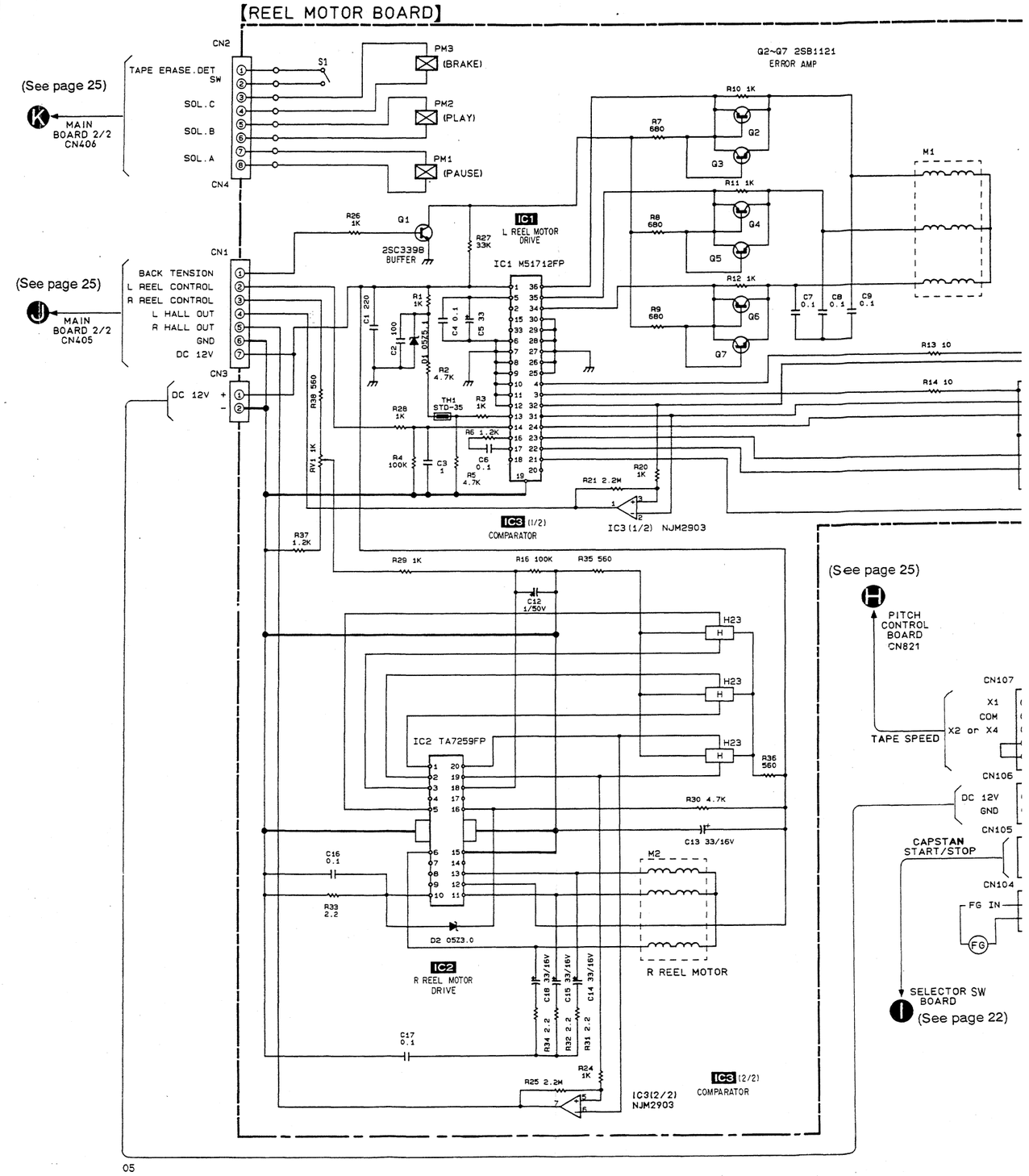
DC 12V

CN3

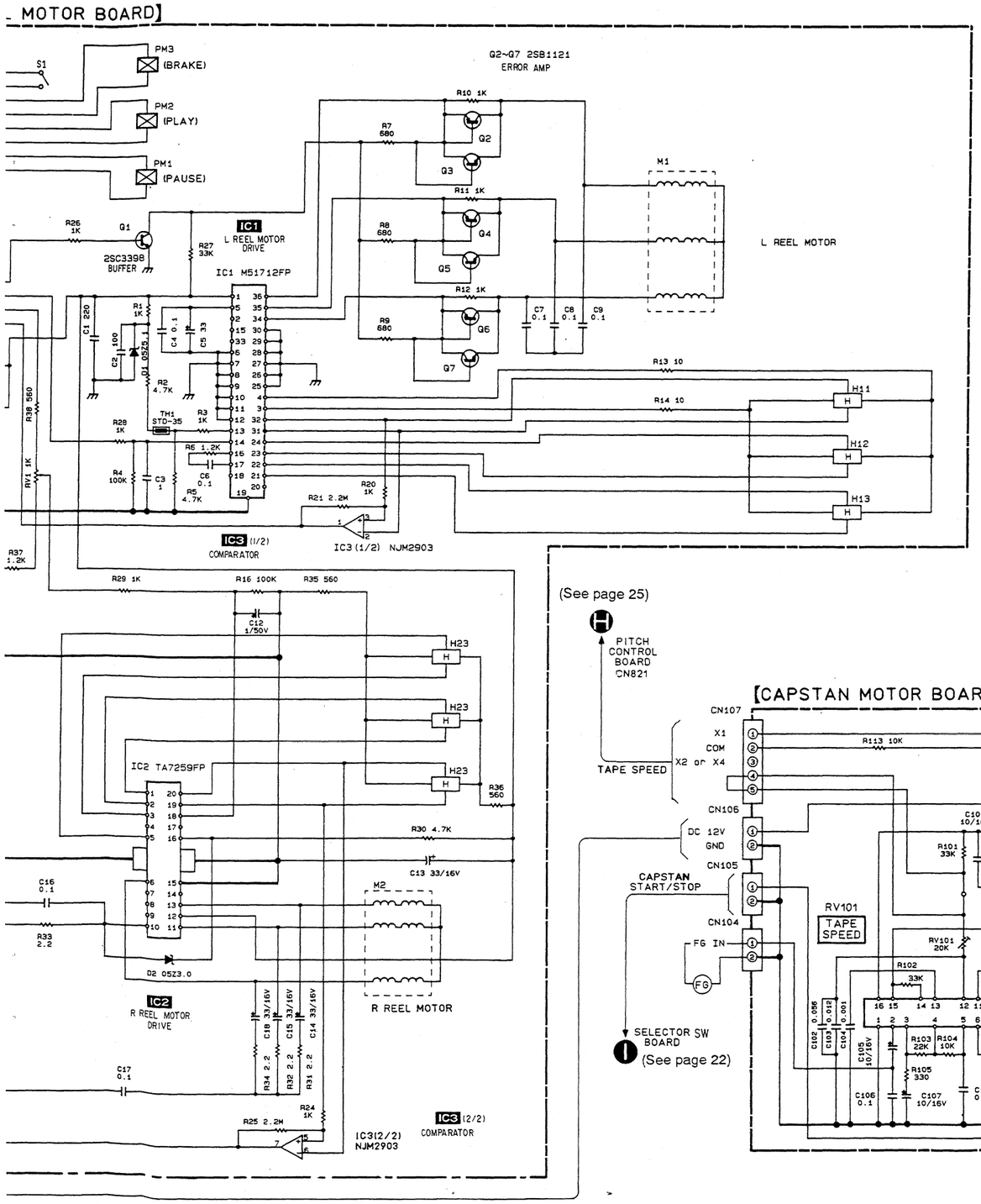
DC 12V + -

05


FLT601 FLUORESCENT DISPLAY TUBE
Q606 2SA1348
Q607 2SA1348
Q608 2SA1348
Q609 2SA1348
Q610 2SA1348
Q611 2SA1348
R612 390K
R611 390K
R613 390K
R614 390K
R615 390K
R616 390K
Q606-611 SWITCH
D612 1SS176
IC601 HD614042SA87
DISPLAY SYSTEM CONTROL
IC601 DISPLAY CONTROL
IC602 HD14069UBP
IC604 PST-520D
RESET
S601
COUNTER RESET
Q613,614 SWITCH
D605 1SS176
Q612 2SC3402 SWITCH
IC603 (2/2) NJM2903D
IC603 (1/2) NJM2903D
IC603 COMPARATOR
IC602 D/A BUFFER
D610 TLG220
D608 TLR220
D609 TLO220
D607 TLR220
D606 TLR220


【REEL MOTOR BOARD】
CN2
TAPE ERASE.DET SW
SOL.C
SOL.B
SOL.A
CN4
S1
PM3 (BRAKE)
PM2 (PLAY)
PM1 (PAUSE)
(See page 25)
MAIN BOARD 2/2 CN406
CN1
BACK TENSION
L REEL CONTROL
R REEL CONTROL
L HALL OUT
R HALL OUT
GND
DC 12V
CN3
DC 12V
(See page 25)
MAIN BOARD 2/2 CN405
Q2~Q7 2SB1121 ERROR AMP
Q1 2SC3398 BUFFER
IC1 L REEL MOTOR DRIVE
IC1 M51712FP
M1
IC3 (1/2) COMPARATOR
IC3(1/2) NJM2903
IC2 TA7259FP
IC2 R REEL MOTOR DRIVE
D2 05Z3.0
M2
R REEL MOTOR
IC3 (2/2) COMPARATOR
IC3(2/2) NJM2903
(See page 25)
PITCH CONTROL BOARD CN821
TAPE SPEED
CN107
CN106
CN105
CAPSTAN START/STOP
CN104
FG IN
SELECTOR SW BOARD
(See page 22)

- MOTOR BOARD]



• **Mecha Deck Part**

The parts which have not been shown on the diagram are supplied with a unit as the tape recorder Mecha Deck.

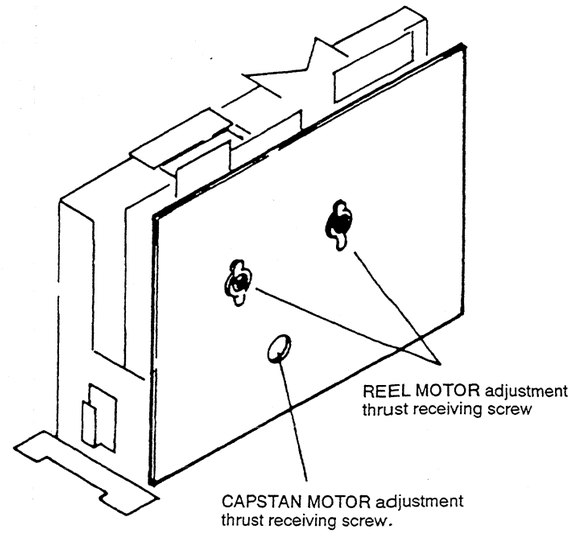
[Reference]

Mechanism Part Adjustment

〔Gap adjustment of REEL MOTOR, CAPSTAN MOTOR〕

Adjust the thrust receiving screw behind so that the gap between REEL MOTOR or CAPSTAN MOTOR and coil pipe should be 0.3mm.

Mecha Deck Back Portion



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

> **Note:** The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
> Replace only with part number specified.

- B+ : B + Line.
- B− : B − Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  < > : REC
  ✱ : Impossible to measure
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC

【REMOCON TERMINAL BOARD】

B+

IC871
BUFFER

C888
0.1

C881 0.1

RA871
100Kx8

DA871 DAN803

CN871

PLAY	1
FF	2
REW	3
STOP	4
PAUSE	5
REC	6
GND	7

MAIN BOARD (2/2)
CN402

(See page 24)

HC541AP
IC871

R871 1K
R872 1K
R873 1K
R874 1K
R875 1K
R876 1K

DA872
DAP803

C876 0.01
C875 0.01
C874 0.01
C873 0.01
C872 0.01
C871 0.01

J871

1	REC OUT
2	N.C.
3	GND
4	N.C.
5	PLAY OUT
6	GND
7	N.C.
8	PAUSE OUT
9	GND
10	TAPE END
11	N.C.
12	GND
13	REC
14	STOP
15	GND
16	REW
17	PLAY
18	GND
19	FF
20	PAUSE
21	GND
22	N.C.
23	N.C.
24	N.C.
25	N.C.

REMOTE CONTROL

B+

IC872
BUFFER

RA872
100Kx8

R877
10

C882 0.1

C883
100/10

CN872

+5.4V	1
PLAY	2
REC	3
PAUSE	4
TAPE END	5

MAIN BOARD (2/2)
CN410

(See page 23)

M54560P
IC872

C884
0.1

C885
0.1

PLAY
REC
PAUSE
TAPE END

DA873
DAN803

DA874
DAP803

D871
D872
D873
D874

D871-874
ISS176

C877 0.1
C878 0.1
C879 0.1
C880 0.1

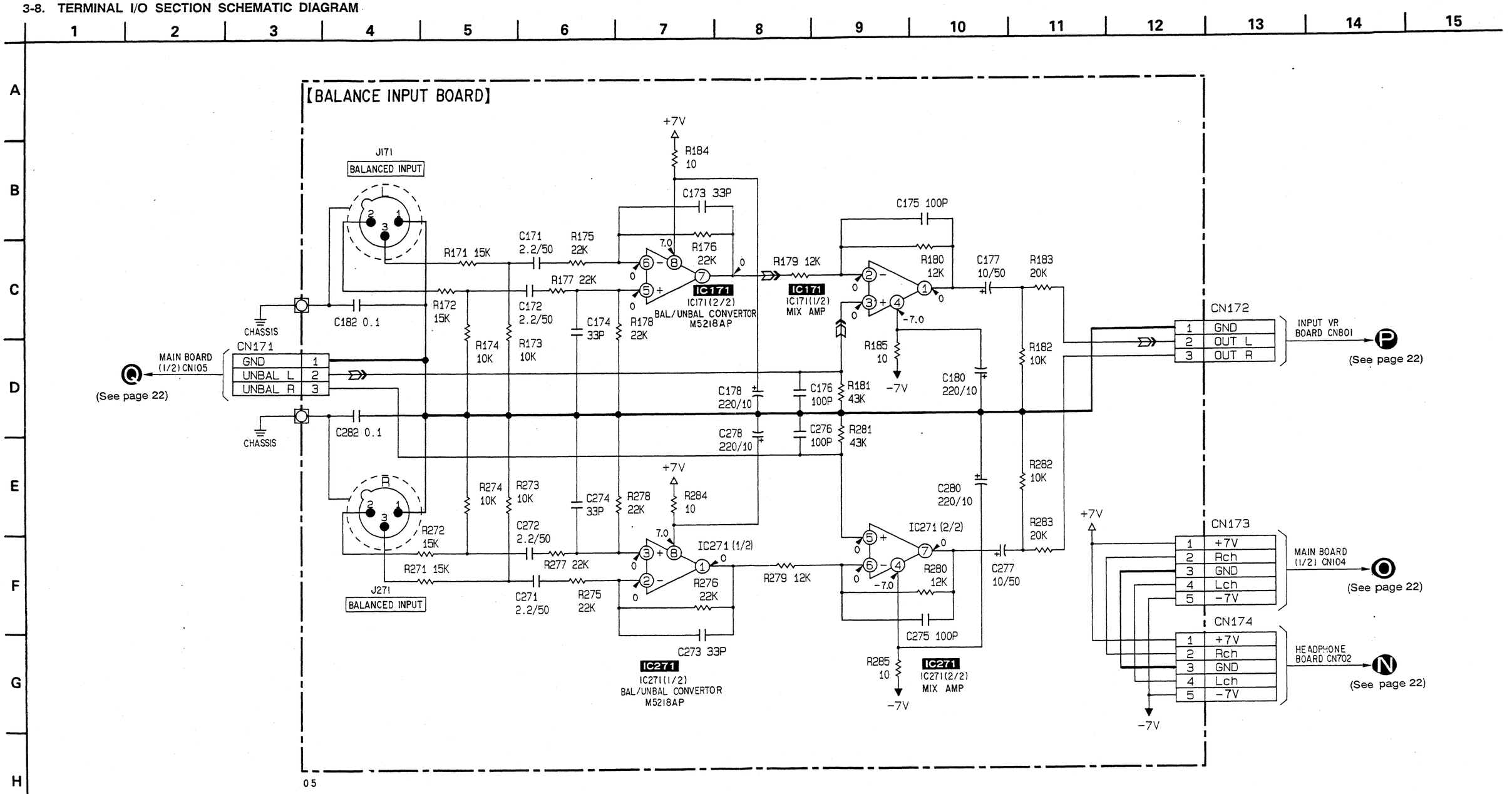
C886 0.1

C887 0.1

(CHASSIS)

05

3-8. TERMINAL I/O SECTION SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

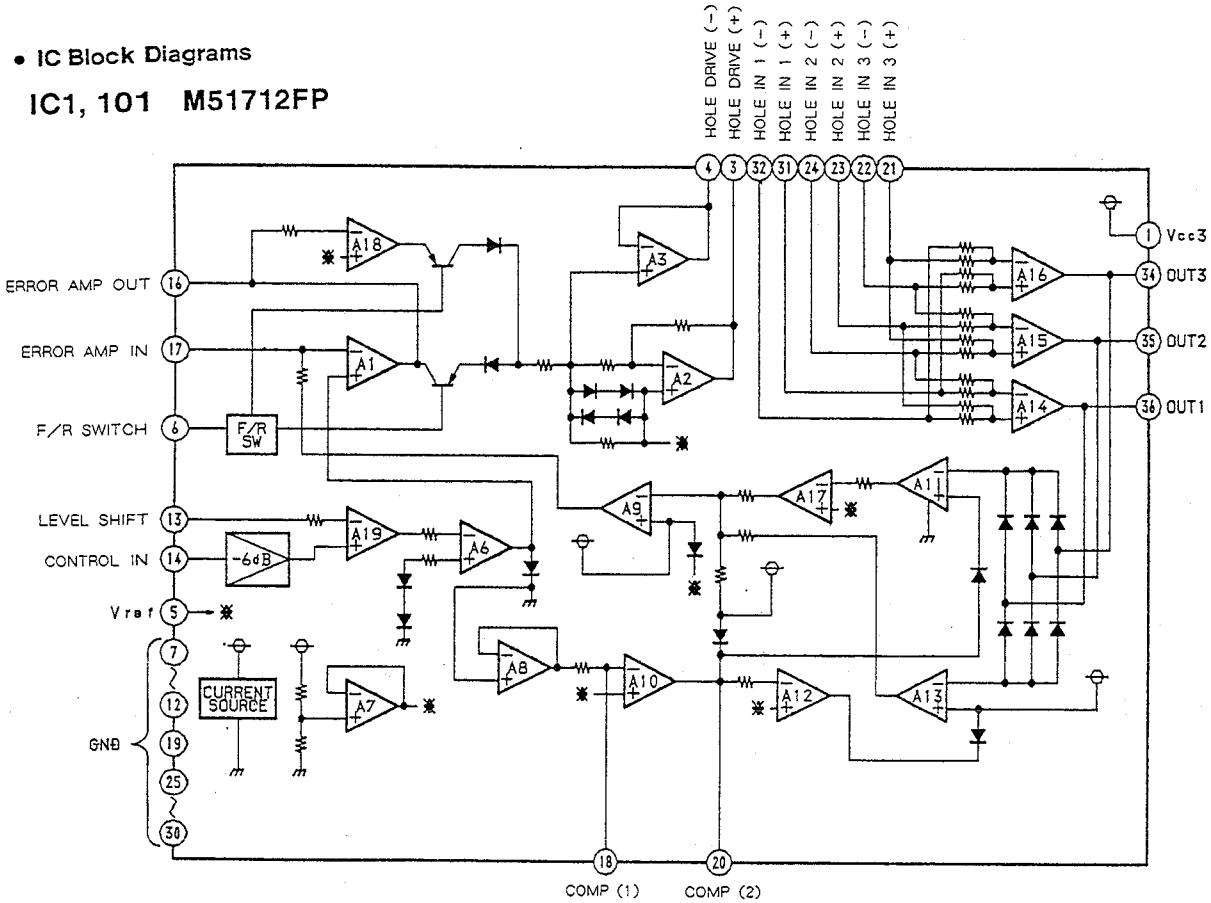
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B + Line.
- B− : B − Line.
- ▭ : adjustment for repair.

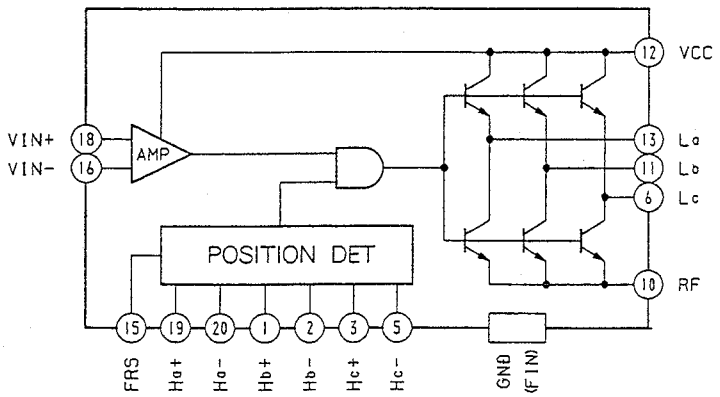
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  < > : REC
  ✻ : Impossible to measure
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷» : REC

• IC Block Diagrams

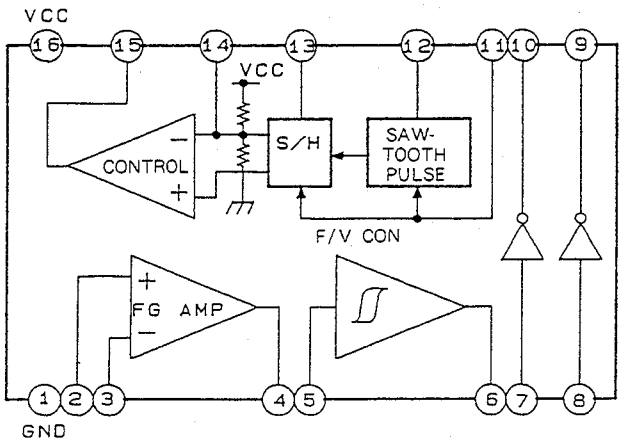
IC1, 101 M51712FP



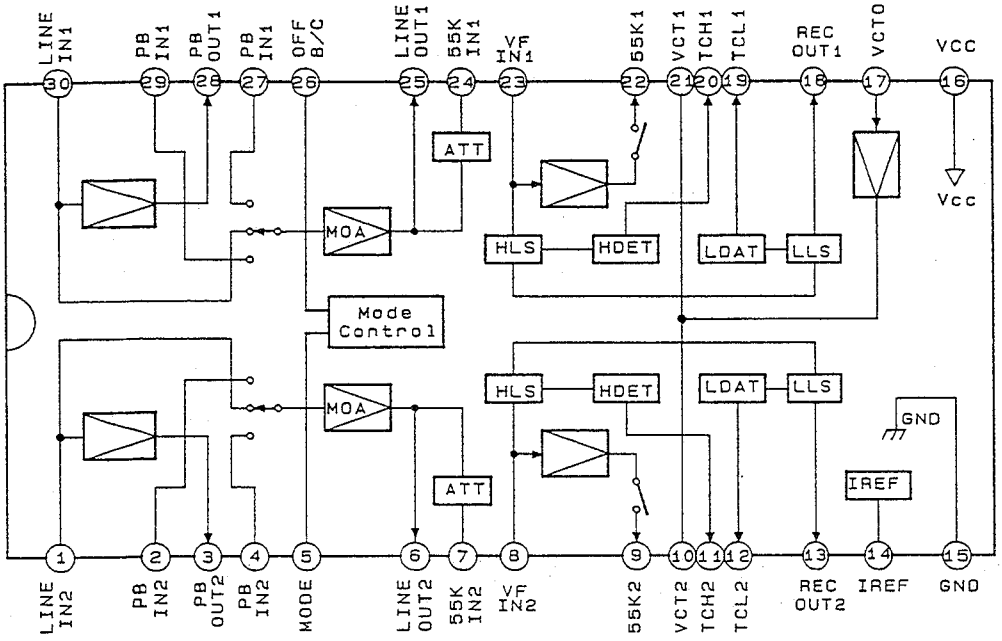
IC2 TA7259F



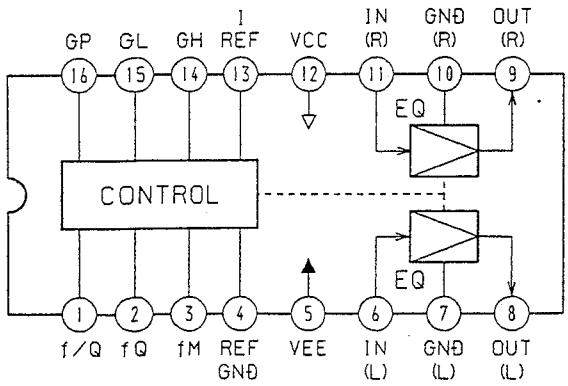
IC102 BA6303



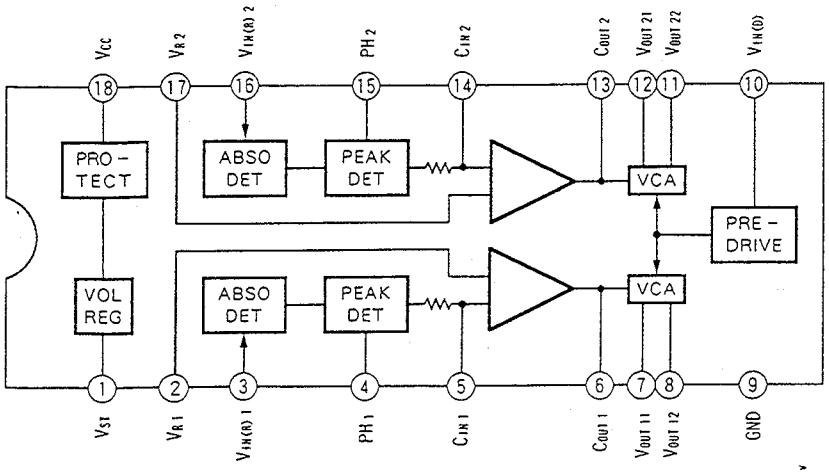
IC202 CXA1330S



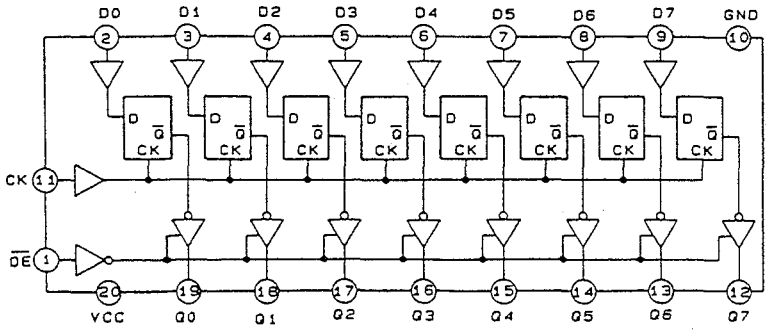
IC206 CXA1198AP



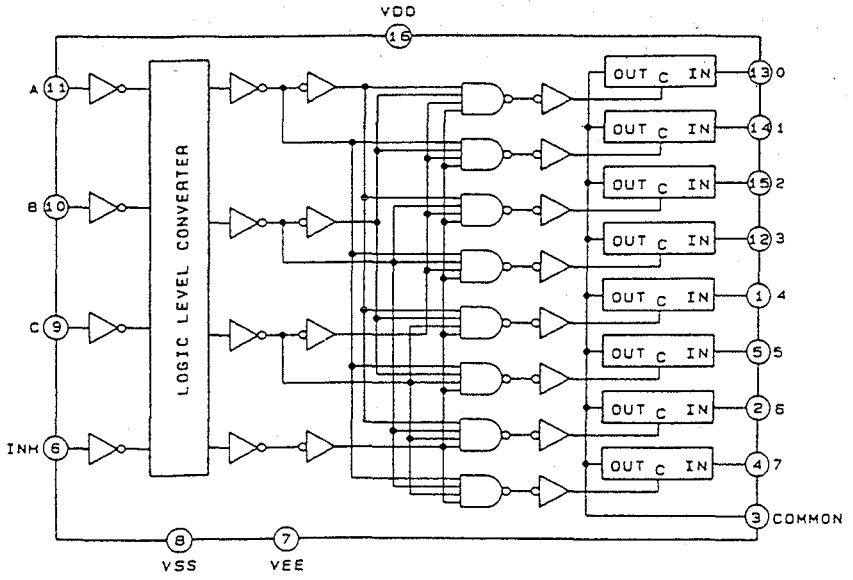
IC207 μPC1297CA



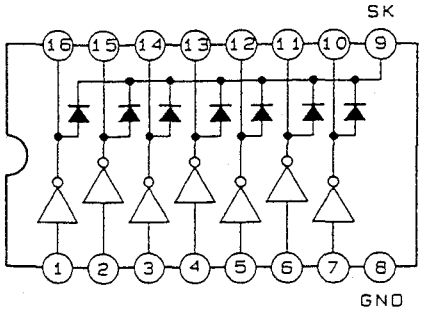
IC409, 410 SN74HC574AN



IC411, 412 MC14051BCP

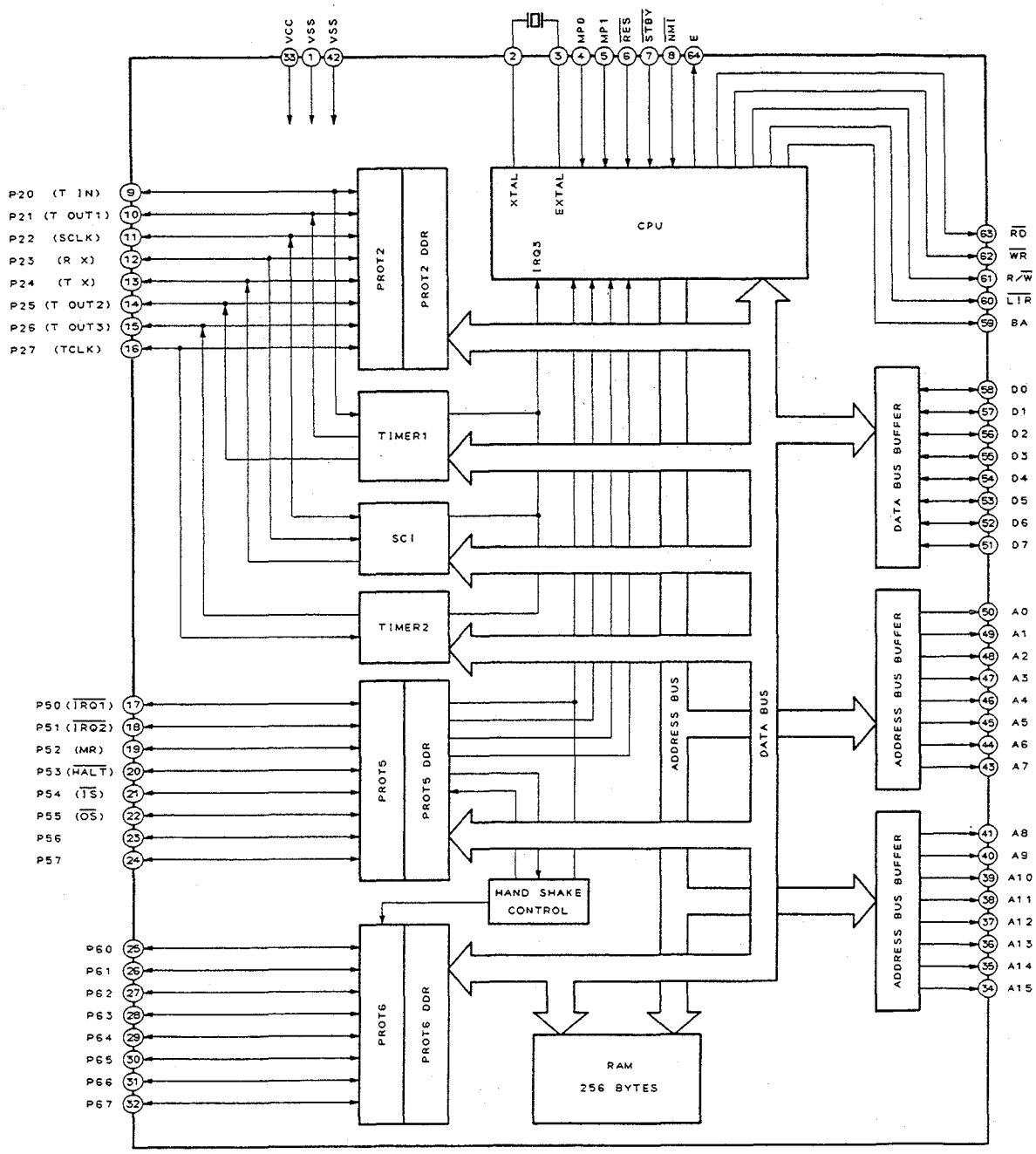


IC415 μPA2003C



3-9. IC PIN FUNCTIONS

IC401 HD63B03YP



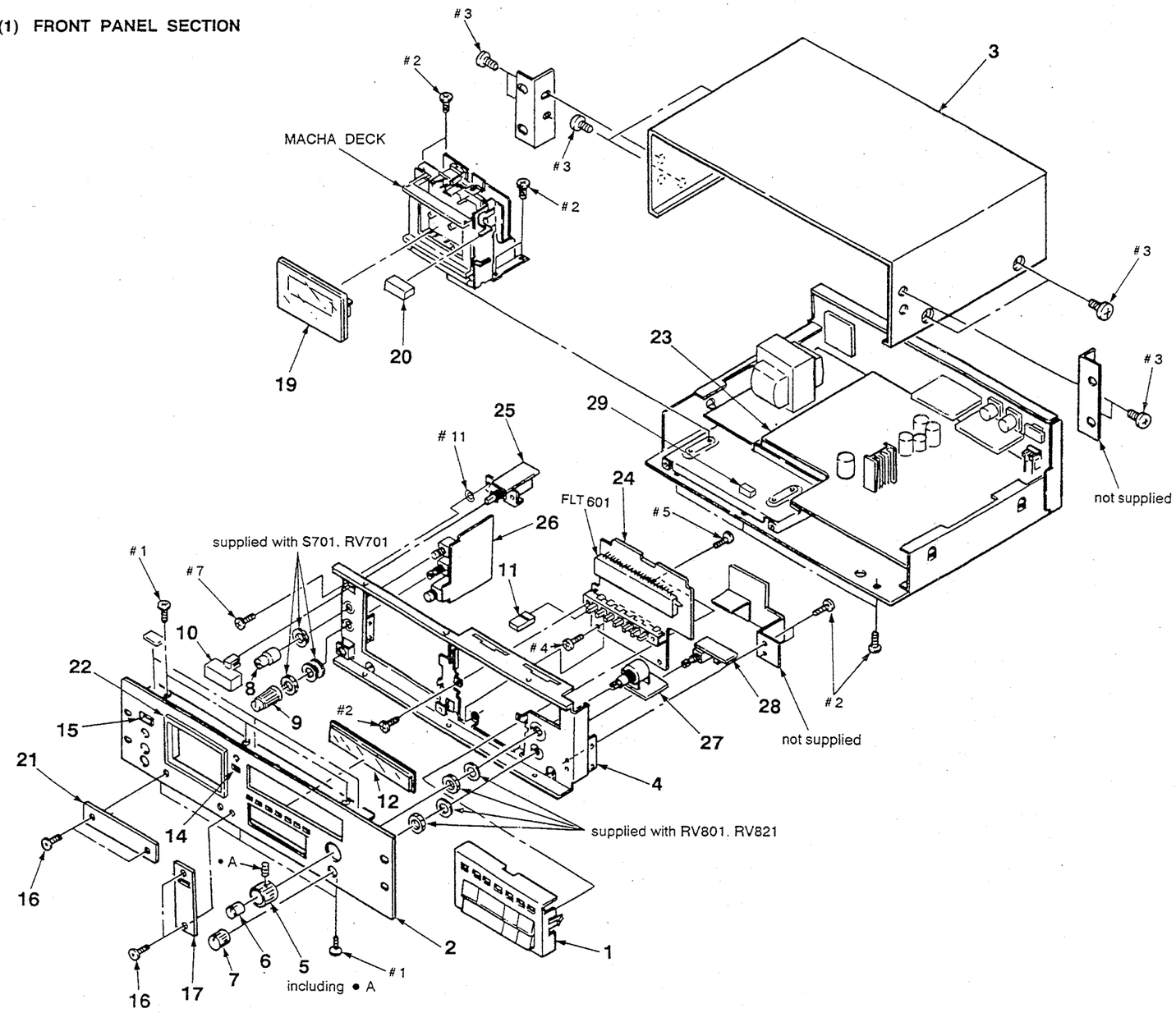
SECTION 4
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

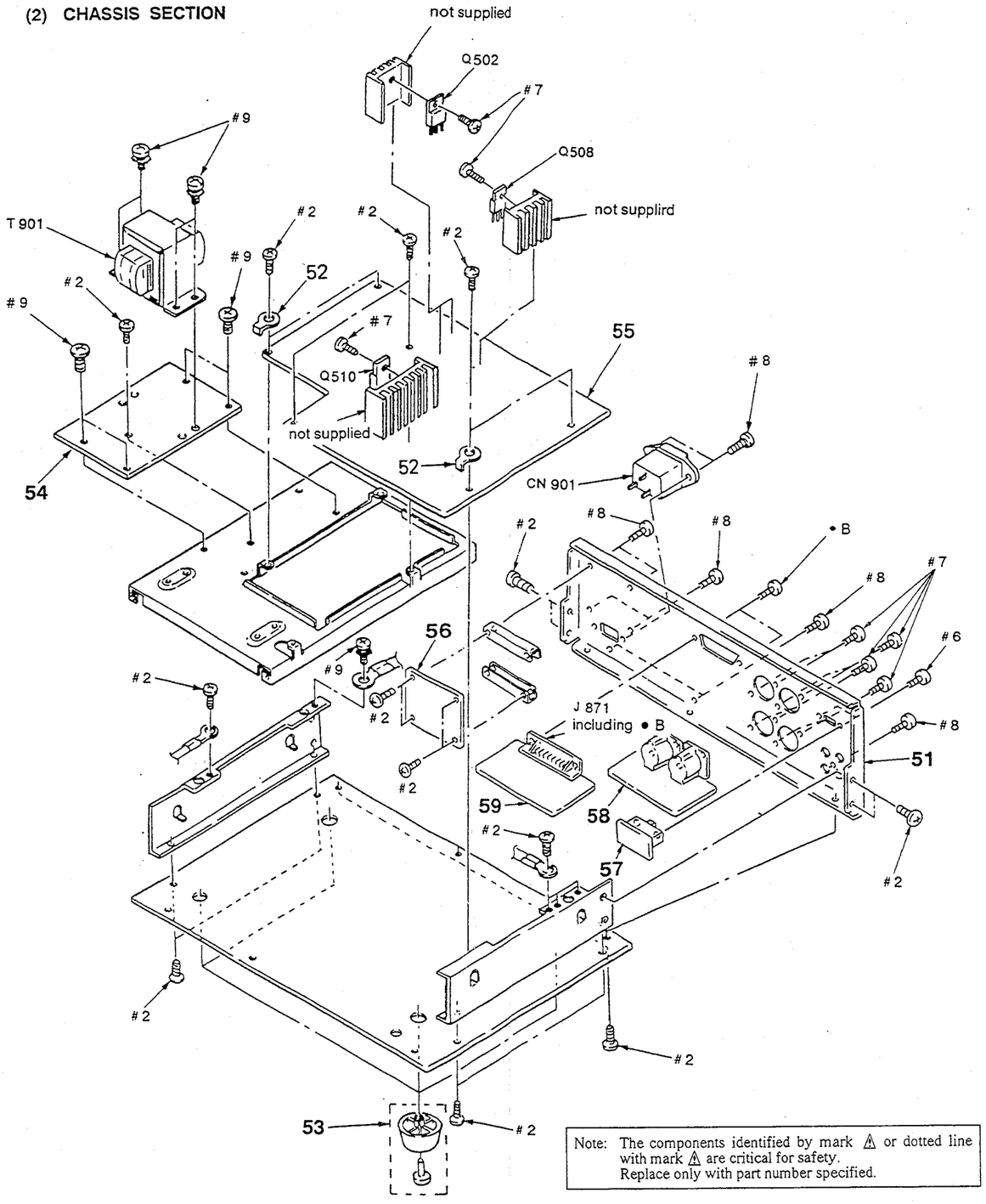
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	A-4587-306-A	BUTTON ASSY, CONTROL	
2	2-337-916-11	PANEL, FRONT	
* 3	2-337-915-01	PLATE, TOP	
* 4	2-337-901-01	REINFORCEMENT, FRONT PANEL	
5	2-337-899-01	KNOB (L), REC	
6	X-2335-062-4	KNOB ASSY (LARGE), ROTARY	
7	2-335-451-41	KNOB (SMALL), ROTARY	
8	2-335-853-01	KNOB	
9	2-337-850-01	KNOB (LARGE), ROTARY	
10	2-335-924-01	BUTTON	
11	2-335-454-01	PUSH BUTTON	
12	2-337-906-01	WINDOW, INDICATION	
14	2-337-902-01	ESCUTCHEON, EJECT BUTTON	
* 15	2-335-846-01	ESCUTCHEON	
16	2-337-186-01	SCREW (S), ARBOR HEAD	
17	2-337-896-11	PANEL (B), SUB	
19	A-4587-308-A	LID ASSY, CASSETTE	
20	3-318-643-01	BUTTON, EJECT	
21	2-337-895-01	PANEL (A), SUB	
22	2-337-907-01	ESCUTCHEON, CASSETTE LID	
* 23	A-4588-626-A	MAIN BOARD, COMPLETE	
* 24	A-4588-419-A	SW, INDICATION BOARD, COMPLETE	
25	1-634-404-01	POWER SWITCH BOARD	
26	1-634-401-11	HEADPHONE BOARD	
27	1-634-402-11	INPUT VOLUME BOARD	
28	1-634-403-11	PITCH CONTROL BOARD	
* 29	3-343-272-01	CUSHION	
FLT601	1-519-491-11	INDICATOR TUBE, FLUORESCENT	

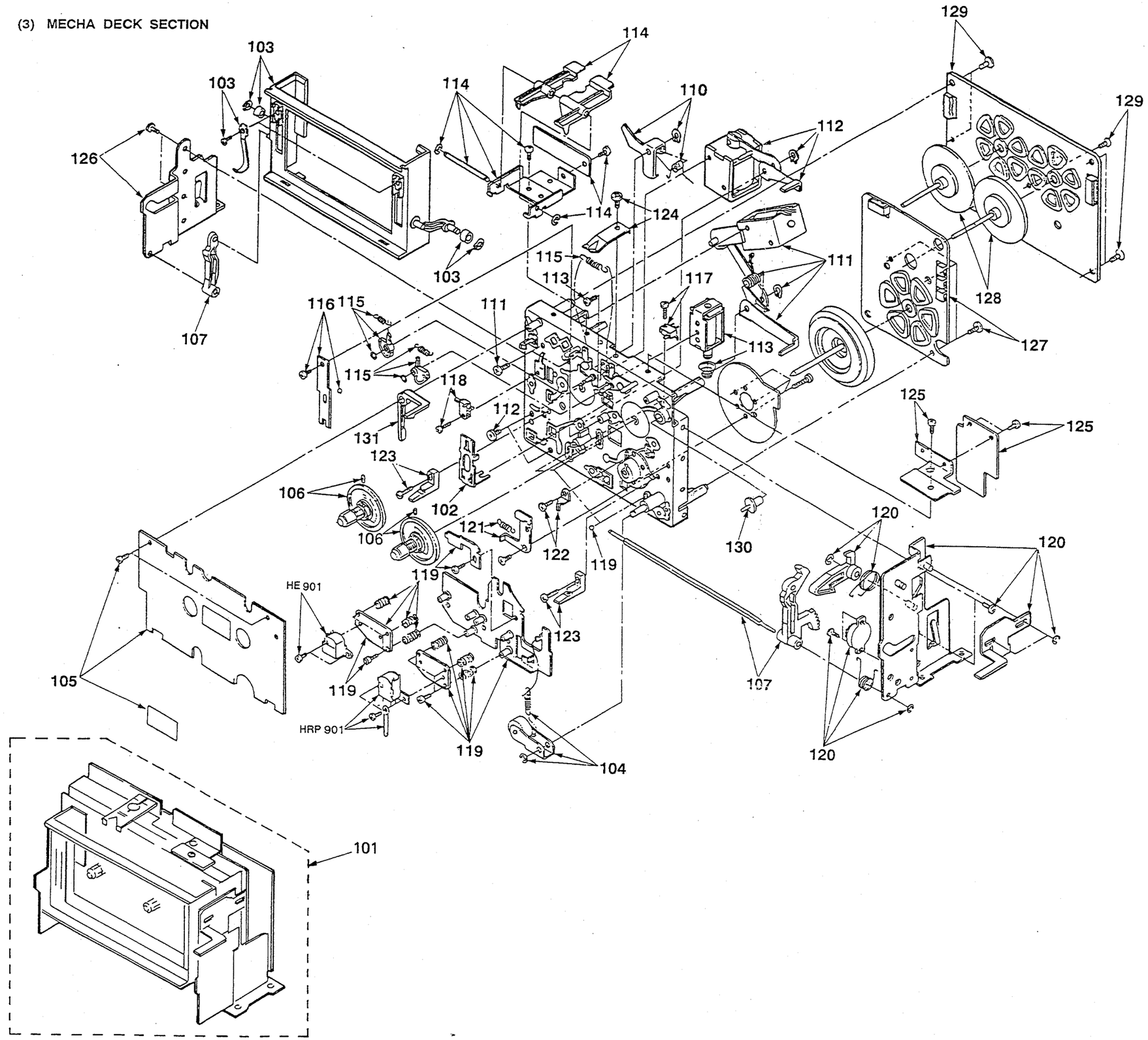
(2) CHASSIS SECTION



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 51	2-338-758-02	PANEL, BACK	
53	2-337-897-01	FOOT	
* 54	2-337-995-01	BRACKET, TRANSFORMER	
* 55	A-4588-626-A	MAIN BOARD, COMPLETE	
56	1-649-791-11	VOLTAGE SELECTION BOARD	
57	1-649-792-11	MODE SW BOARD	
58	1-649-333-11	BALANCE INPUT BOARD	
59	1-649-334-11	REMOCON TERMINAL BOARD	
⚠CN901	1-580-375-21	INLET 3P	
* J871	1-563-772-11	D-SUB 25P	
⚠T901	1-423-852-11	TRANSFORMER, POWER	

(3) MECHA DECK SECTION



Ref. No.	Part No.	Description	Remark
101	A-2104-001-A	MECHA DECK	
102	2-338-009-01	JOINT, BRAKE	
103	X-2335-256-1	HOLDER ASSY, CASSETTE	
104	X-2335-228-1	PINCH ROLLER ASSY	
105	X-2335-229-1	PLATE ASSY, ORNAMENTAL	
106	X-2335-230-1	TABLE ASSY, REEL	
107	X-2335-231-1	ARM UNIT ASSY, EJECT	
110	X-2335-234-1	JOINT UNIT ASSY	
111	X-2335-235-1	SOLENOID ASSY, PAUSE	
112	X-2335-236-1	SOLENOID ASSY, PLAY	
113	X-2335-237-1	SOLENOID ASSY, BRAKE	
114	X-2335-238-1	SWITCH ASSY, TAPE DETECTION	
115	X-2335-239-1	ARM UNIT ASSY, BRAKE	
116	X-2335-240-1	RETAINER UNIT ASSY, HEAD BASE	
117	X-2335-241-1	DETECTION ASSY, CASSETTE	
118	X-2335-242-1	SWITCH ASSY, PREVENTION	
119	X-2335-243-1	BASE ASSY, HEAD	
120	X-2335-244-1	CHASSIS (R) ASSY, SIDE	
121	X-2335-245-1	LEVER UNIT ASSY, PREVENTION	
122	X-2335-246-1	KILLER UNIT ASSY, NOISE	
123	X-2335-247-1	RETAINER UNIT ASSY, CASSETTE	
124	X-2335-248-1	RETAINER UNIT ASSY, CASSETTE	
125	X-2335-249-1	DETECTION ASSY, ROTARY	
126	X-2335-250-1	CHASSIS (L) ASSY, SIDE	
127	X-2335-252-1	CAPSTAN MOTOR BOARD	
128	X-2335-253-1	MOTOR ASSY, REEL	
129	X-2335-254-1	REEL MOTOR BOARD	
130	2-337-898-01	PIN, CASSETTE DETECTION	
131	2-337-908-01	LEVER, PREVENTION	
HE901	X-2335-233-1	HEAD ASSY, ERASE	
HRP901	X-2335-232-1	HEAD ASSY, REC/PB	

SECTION 5
ELECTRICAL PARTS LIST

BALANCE INPUT HEADPHONE

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-649-333-11	BALANCE INPUT BOARD **********			
		< CAPACITOR >			
C171	1-124-767-00	ELECT	2.2uF	20% 50V	
C172	1-124-767-00	ELECT	2.2uF	20% 50V	
C173	1-102-963-00	CERAMIC	33PF	5% 50V	
C174	1-102-963-00	CERAMIC	33PF	5% 50V	
C175	1-102-973-00	CERAMIC	100PF	5% 50V	
C176	1-102-973-00	CERAMIC	100PF	5% 50V	
C177	1-126-964-11	ELECT	10uF	20% 50V	
C178	1-126-923-11	ELECT	220uF	20% 10V	
C180	1-126-923-11	ELECT	220uF	20% 10V	
C182	1-161-063-00	CERAMIC	0.1uF	10% 50V	
C271	1-124-767-00	ELECT	2.2uF	20% 50V	
C272	1-124-767-00	ELECT	2.2uF	20% 50V	
C273	1-102-963-00	CERAMIC	33PF	5% 50V	
C274	1-102-963-00	CERAMIC	33PF	5% 50V	
C275	1-102-973-00	CERAMIC	100PF	5% 50V	
C276	1-102-973-00	CERAMIC	100PF	5% 50V	
C277	1-126-964-11	ELECT	10uF	20% 50V	
C278	1-126-923-11	ELECT	220uF	20% 10V	
C280	1-126-923-11	ELECT	220uF	20% 10V	
C282	1-161-063-00	CERAMIC	0.1uF	10% 50V	
		< CONNECTOR >			
CN171	1-564-506-11	PLUG, CONNECTOR 3P			
CN172	1-564-506-11	PLUG, CONNECTOR 3P			
* CN173	1-564-508-11	PLUG, CONNECTOR 5P			
* CN174	1-564-508-11	PLUG, CONNECTOR 5P			
		< IC >			
IC171	8-759-634-51	IC M5218AP			
IC271	8-759-634-51	IC M5218AP			
		< JACK >			
* J171	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (BALANCED INPUT L)			
* J271	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (BALANCED INPUT R)			
		< RESISTOR >			
R171	1-215-449-00	METAL	15K	1% 1/6W	
R172	1-215-449-00	METAL	15K	1% 1/6W	
R173	1-215-445-00	METAL	10K	1% 1/6W	
R174	1-215-445-00	METAL	10K	1% 1/6W	
R175	1-215-453-00	METAL	22K	1% 1/6W	
R176	1-215-453-00	METAL	22K	1% 1/6W	
R177	1-215-453-00	METAL	22K	1% 1/6W	
R178	1-215-453-00	METAL	22K	1% 1/6W	
R179	1-249-430-11	CARBON	12K	5% 1/4W	
R180	1-249-430-11	CARBON	12K	5% 1/4W	
R181	1-247-870-11	CARBON	43K	5% 1/4W	
R182	1-247-855-31	CARBON	10K	5% 1/4W	
R183	1-247-862-11	CARBON	20K	5% 1/4W	
R184	1-249-393-11	CARBON	10	5% 1/4W F	
R185	1-249-393-11	CARBON	10	5% 1/4W F	
R271	1-215-449-00	METAL	15K	1% 1/6W	
R272	1-215-449-00	METAL	15K	1% 1/6W	
R273	1-215-445-00	METAL	10K	1% 1/6W	
R274	1-215-445-00	METAL	10K	1% 1/6W	
R275	1-215-453-00	METAL	22K	1% 1/6W	
R276	1-215-453-00	METAL	22K	1% 1/6W	
R277	1-215-453-00	METAL	22K	1% 1/6W	
R278	1-215-453-00	METAL	22K	1% 1/6W	
R279	1-249-430-11	CARBON	12K	5% 1/4W	
R280	1-249-430-11	CARBON	12K	5% 1/4W	
R281	1-247-870-11	CARBON	43K	5% 1/4W	
R282	1-247-855-31	CARBON	10K	5% 1/4W	
R283	1-247-862-11	CARBON	20K	5% 1/4W	
R284	1-249-393-11	CARBON	10	5% 1/4W F	
R285	1-249-393-11	CARBON	10	5% 1/4W F	
**********					
*	1-634-401-11	HEADPHONE BOARD **********			
		< CAPACITOR >			
C701	1-124-907-11	ELECT	10uF	20% 50V	
C702	1-124-907-11	ELECT	10uF	20% 50V	

HEADPHONE | INPUT VOLUME | MAIN

Ref.No.	Part No.	Description			Remark
C703	1-136-157-00	FILM	0.022uF	5%	50V
C704	1-136-157-00	FILM	0.022uF	5%	50V
C705	1-124-443-00	ELECT	100uF	20%	10V
C706	1-124-443-00	ELECT	100uF	20%	10V
		< IC >			
IC701	8-759-100-06	IC UPC4556C			
		< JACK >			
J701	1-507-796-71	JACK (HEADPHONES)			
		< RESISTOR >			
R701	1-247-864-11	CARBON	24K	5%	1/4W
R702	1-247-864-11	CARBON	24K	5%	1/4W
R703	1-247-839-31	CARBON	2.2K	5%	1/4W
R704	1-247-839-31	CARBON	2.2K	5%	1/4W
R705	1-249-436-11	CARBON	39K	5%	1/4W
R706	1-249-436-11	CARBON	39K	5%	1/4W
R707	1-249-409-11	CARBON	220	5%	1/4W F
R708	1-249-409-11	CARBON	220	5%	1/4W F
		< VARIABLE RESISTOR >			
RV701	1-238-470-11	RES, VAR, CARBON 20K/20K (HEADPHONES LEVEL)			
		< SWITCH >			
S701	1-572-265-11	SWITCH, ROTARY (TIMER)			

****

*	1-634-402-11	INPUT VOLUME BOARD			
		**********			
		< CAPACITOR >			
C519	1-161-085-00	CERAMIC	0.0047uF	10%	50V
		< VARIABLE RESISTOR >			
RV801	1-241-192-11	RES, VAR, CARBON 20K/20K (REC LEVEL)			

****

*	A-4588-626-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-110-342-11	FILM	390PF	5%	50V
C102	1-126-176-11	ELECT	220uF	20%	10V
C103	1-124-472-11	ELECT	470uF	20%	10V
C104	1-136-158-00	FILM	0.027uF	5%	50V
C105	1-136-158-00	FILM	0.027uF	5%	50V
C106	1-126-964-11	ELECT	10uF	20%	50V
C107	1-124-903-11	ELECT	1uF	20%	50V
C108	1-124-903-11	ELECT	1uF	20%	50V
C109	1-106-351-00	MYLAR	2200PF	5%	200V
C110	1-106-351-00	MYLAR	2200PF	5%	200V
C111	1-136-174-00	FILM	0.56uF	5%	50V
C112	1-136-171-00	FILM	0.33uF	5%	50V
C113	1-126-964-11	ELECT	10uF	20%	50V
C114	1-124-925-11	ELECT	2.2uF	20%	100V
C115	1-124-472-11	ELECT	470uF	20%	10V
C116	1-124-472-11	ELECT	470uF	20%	10V
C117	1-126-962-11	ELECT	3.3uF	20%	50V
C118	1-124-443-00	ELECT	100uF	20%	10V
C119	1-124-443-00	ELECT	100uF	20%	10V
C120	1-101-888-00	CERAMIC	68PF	5%	50V
C121	1-101-888-00	CERAMIC	68PF	5%	50V
C122	1-126-934-11	ELECT	220uF	20%	16V
C123	1-126-934-11	ELECT	220uF	20%	16V
C124	1-161-039-00	CERAMIC	0.001uF	10%	50V
C125	1-161-063-00	CERAMIC	0.1uF	10%	50V
C126	1-126-768-11	ELECT	2200uF	20%	16V
C127	1-161-039-00	CERAMIC	0.001uF	10%	50V
C128	1-161-039-00	CERAMIC	0.001uF	10%	50V
C129	1-137-504-00	PP-FILM	150PF	5%	50V
C151	1-124-925-11	ELECT	2.2uF	20%	100V
C152	1-124-903-11	ELECT	1uF	20%	50V
C153	1-124-443-00	ELECT	100uF	20%	10V
C154	1-126-963-11	ELECT	4.7uF	20%	50V
C155	1-124-645-00	ELECT	10uF	20%	16V
C156	1-130-014-00	FILM	470PF	5%	50V
C157	1-137-504-00	PP-FILM	150PF	5%	50V
C161	1-136-153-00	FILM	0.01uF	5%	50V
C162	1-136-157-00	FILM	0.022uF	5%	50V
C163	1-136-165-00	FILM	0.1uF	5%	50V
C164	1-107-737-00	PP-FILM	560PF	5%	50V
C165	1-130-017-00	FILM	820PF	5%	50V
C166	1-102-973-00	CERAMIC	100PF	5%	50V
C167	1-126-964-11	ELECT	10uF	20%	50V
C201	1-110-342-11	FILM	390PF	5%	50V
C202	1-126-176-11	ELECT	220uF	20%	10V
C203	1-124-472-11	ELECT	470uF	20%	10V
C204	1-136-158-00	FILM	0.027uF	5%	50V
C205	1-136-158-00	FILM	0.027uF	5%	50V
C206	1-126-964-11	ELECT	10uF	20%	50V
C207	1-124-903-11	ELECT	1uF	20%	50V
C208	1-124-903-11	ELECT	1uF	20%	50V
C209	1-106-351-00	MYLAR	2200PF	5%	200V
C210	1-106-351-00	MYLAR	2200PF	5%	200V
C211	1-136-174-00	FILM	0.56uF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C212	1-136-171-00	FILM	0.33uF	5%	50V
C213	1-126-964-11	ELECT	10uF	20%	50V
C214	1-124-925-11	ELECT	2.2uF	20%	100V
C215	1-124-472-11	ELECT	470uF	20%	10V
C216	1-124-472-11	ELECT	470uF	20%	10V
C217	1-126-962-11	ELECT	3.3uF	20%	50V
C218	1-124-443-00	ELECT	100uF	20%	10V
C219	1-124-443-00	ELECT	100uF	20%	10V
C220	1-101-888-00	CERAMIC	68PF	5%	50V
C221	1-101-888-00	CERAMIC	68PF	5%	50V
C222	1-126-934-11	ELECT	220uF	20%	16V
C223	1-126-934-11	ELECT	220uF	20%	16V
C224	1-161-039-00	CERAMIC	0.001uF	10%	50V
C225	1-161-063-00	CERAMIC	0.1uF	10%	50V
C226	1-161-063-00	CERAMIC	0.1uF	10%	50V
C227	1-161-039-00	CERAMIC	0.001uF	10%	50V
C228	1-161-039-00	CERAMIC	0.001uF	10%	50V
C229	1-137-504-00	PP-FILM	150PF	5%	50V
C251	1-124-925-11	ELECT	2.2uF	20%	100V
C252	1-124-903-11	ELECT	1uF	20%	50V
C253	1-124-443-00	ELECT	100uF	20%	10V
C254	1-126-963-11	ELECT	4.7uF	20%	50V
C255	1-124-645-00	ELECT	10uF	20%	16V
C256	1-130-014-00	FILM	470PF	5%	50V
C257	1-137-504-00	PP-FILM	150PF	5%	50V
C261	1-136-153-00	FILM	0.01uF	5%	50V
C262	1-136-157-00	FILM	0.022uF	5%	50V
C263	1-136-165-00	FILM	0.1uF	5%	50V
C264	1-107-737-00	PP-FILM	560PF	5%	50V
C265	1-130-017-00	FILM	820PF	5%	50V
C266	1-102-973-00	CERAMIC	100PF	5%	50V
C267	1-126-964-11	ELECT	10uF	20%	50V
C268	1-126-964-11	ELECT	10uF	20%	50V
C301	1-126-803-11	ELECT	47uF	20%	25V
C302	1-126-803-11	ELECT	47uF	20%	25V
C303	1-124-903-11	ELECT	1uF	20%	50V
C304	1-130-989-11	FILM	0.012uF	5%	50V
C305	1-126-233-11	ELECT	22uF	20%	50V
C306	1-130-021-00	FILM	0.0018uF	5%	50V
C307	1-130-021-00	FILM	0.0018uF	5%	50V
C308	1-130-726-00	FILM	0.0015uF	5%	50V
C309	1-106-343-00	MYLAR	1000PF	5%	200V
C310	1-106-343-00	MYLAR	1000PF	5%	200V
C311	1-136-165-00	FILM	0.1uF	5%	50V
C312	1-136-166-00	FILM	0.12uF	5%	50V
C313	1-124-903-11	ELECT	1uF	20%	50V
C314	1-136-166-00	FILM	0.12uF	5%	50V
C315	1-124-472-11	ELECT	470uF	20%	10V
C316	1-107-206-00	MICA	15PF	5%	500V
C317	1-124-443-00	ELECT	100uF	20%	10V
C401	1-161-063-00	CERAMIC	0.1uF	10%	50V
C402	1-102-951-00	CERAMIC	15PF	5%	50V
C403	1-102-951-00	CERAMIC	15PF	5%	50V
C404	1-124-482-11	ELECT	33uF	20%	35V
C405	1-161-051-00	CERAMIC	0.01uF	10%	50V
C406	1-161-051-00	CERAMIC	0.01uF	10%	50V
C407	1-161-051-00	CERAMIC	0.01uF	10%	50V
C408	1-161-051-00	CERAMIC	0.01uF	10%	50V
C409	1-136-165-00	FILM	0.1uF	5%	50V
C410	1-136-165-00	FILM	0.1uF	5%	50V
C411	1-126-233-11	ELECT	22uF	20%	50V
C412	1-124-482-11	ELECT	33uF	20%	35V
C413	1-124-482-11	ELECT	33uF	20%	35V
C414	1-161-051-00	CERAMIC	0.01uF	10%	50V
C415	1-161-051-00	CERAMIC	0.01uF	10%	50V
C416	1-161-051-00	CERAMIC	0.01uF	10%	50V
C417	1-161-051-00	CERAMIC	0.01uF	10%	50V
C418	1-161-039-00	CERAMIC	0.001uF	10%	50V
C419	1-161-039-00	CERAMIC	0.001uF	10%	50V
C420	1-161-039-00	CERAMIC	0.001uF	10%	50V
C421	1-124-478-11	ELECT	100uF	20%	25V
C422	1-161-051-00	CERAMIC	0.01uF	10%	50V
C423	1-161-051-00	CERAMIC	0.01uF	10%	50V
C424	1-161-051-00	CERAMIC	0.01uF	10%	50V
C425	1-161-051-00	CERAMIC	0.01uF	10%	50V
C426	1-161-051-00	CERAMIC	0.01uF	10%	50V
C427	1-161-051-00	CERAMIC	0.01uF	10%	50V
C428	1-161-051-00	CERAMIC	0.01uF	10%	50V
C429	1-161-051-00	CERAMIC	0.01uF	10%	50V
C430	1-161-051-00	CERAMIC	0.01uF	10%	50V
C431	1-161-063-00	CERAMIC	0.1uF	10%	50V
C432	1-102-978-00	CERAMIC	220PF	5%	50V
C433	1-161-063-00	CERAMIC	0.1uF	10%	50V
C434	1-102-978-00	CERAMIC	220PF	5%	50V
C435	1-161-063-00	CERAMIC	0.1uF	10%	50V
C436	1-161-063-00	CERAMIC	0.1uF	10%	50V
C501	1-126-944-11	ELECT	3300uF	20%	25V
C502	1-126-944-11	ELECT	3300uF	20%	25V
C503	1-124-478-11	ELECT	100uF	20%	25V
C504	1-124-478-11	ELECT	100uF	20%	25V
C505	1-126-952-11	ELECT	1000uF	20%	16V
C506	1-126-952-11	ELECT	1000uF	20%	16V
C507	1-124-443-00	ELECT	100uF	20%	10V
C508	1-126-803-11	ELECT	47uF	20%	25V
C509	1-126-937-11	ELECT	4700uF	20%	16V
C510	1-126-953-11	ELECT	2200uF	20%	35V

Ref. No.	Part No.	Description			Remark
C511	1-126-927-11	ELECT	2200uF	20%	6.3V
C512	1-161-063-00	CERAMIC	0.1uF	10%	50V
C513	1-161-063-00	CERAMIC	0.1uF	10%	50V
C514	1-124-472-11	ELECT	470uF	20%	10V
C515	1-126-969-11	ELECT	220uF	20%	50V
C516	1-126-963-11	ELECT	4.7uF	20%	50V
C517	1-126-936-11	ELECT	3300uF	20%	16V
C518	1-124-122-11	ELECT	100uF	20%	50V
C519	1-126-974-11	ELECT	3300uF	20%	50V
C520	1-161-063-00	CERAMIC	0.1uF	10%	50V
C521	1-161-063-00	CERAMIC	0.1uF	10%	50V
		< CONNECTOR >			
* CN101	1-564-509-11	PLUG, CONNECTOR 6P			
CN102	1-564-506-11	PLUG, CONNECTOR 3P			
CN103	1-564-505-11	PLUG, CONNECTOR 2P			
* CN104	1-564-508-11	PLUG, CONNECTOR 5P			
CN105	1-564-506-11	PLUG, CONNECTOR 3P			
CN301	1-564-506-11	PLUG, CONNECTOR 3P			
* CN303	1-564-507-11	PLUG, CONNECTOR 4P			
* CN304	1-564-513-11	PLUG, CONNECTOR 10P			
CN305	1-564-505-11	PLUG, CONNECTOR 2P			
* CN401	1-564-508-11	PLUG, CONNECTOR 5P			
CN402	1-564-510-11	PLUG, CONNECTOR 7P			
CN403	1-564-506-11	PLUG, CONNECTOR 3P			
* CN405	1-564-508-11	PLUG, CONNECTOR 5P			
CN406	1-564-511-11	PLUG, CONNECTOR 8P			
* CN407	1-564-509-11	PLUG, CONNECTOR 6P			
* CN408	1-564-509-11	PLUG, CONNECTOR 6P			
* CN409	1-564-513-11	PLUG, CONNECTOR 10P			
* CN410	1-564-508-11	PLUG, CONNECTOR 5P			
* CN501	1-564-509-11	PLUG, CONNECTOR 6P			
* CN502	1-564-508-11	PLUG, CONNECTOR 5P			
* CN503	1-564-509-11	PLUG, CONNECTOR 6P			
* CN504	1-564-509-11	PLUG, CONNECTOR 6P			
CN505	1-564-505-11	PLUG, CONNECTOR 2P			
		< DIODE >			
D101	8-719-802-30	DIODE	1SS176		
D201	8-719-802-30	DIODE	1SS176		
D301	8-719-802-30	DIODE	1SS176		
D302	8-719-802-30	DIODE	1SS176		
D303	8-719-802-30	DIODE	1SS176		
D304	8-719-802-30	DIODE	1SS176		
D305	8-719-802-30	DIODE	1SS176		
D306	8-719-802-30	DIODE	1SS176		
D307	8-719-802-30	DIODE	1SS176		
D308	8-719-802-30	DIODE	1SS176		

Ref. No.	Part No.	Description		Remark
D309	8-719-802-30	DIODE	1SS176	
D310	8-719-802-30	DIODE	1SS176	
D311	8-719-802-30	DIODE	1SS176	
D312	8-719-802-30	DIODE	1SS176	
D313	8-719-802-30	DIODE	1SS176	
D314	8-719-802-30	DIODE	1SS176	
D401	8-719-802-30	DIODE	1SS176	
D402	8-719-802-30	DIODE	1SS176	
D403	8-719-802-30	DIODE	1SS176	
D404	8-719-802-30	DIODE	1SS176	
D405	8-719-200-02	DIODE	10E2	
D406	8-719-200-02	DIODE	10E2	
D407	8-719-200-02	DIODE	10E2	
D410	8-719-802-30	DIODE	1SS176	
D501	8-719-924-75	DIODE	HZS5.6JB2	
D502	8-719-924-88	DIODE	HZS7.5JB2	
D503	8-719-820-56	DIODE	S5688B	
D504	8-719-820-56	DIODE	S5688B	
D505	8-719-820-56	DIODE	S5688B	
D506	8-719-802-30	DIODE	1SS176	
D507	8-719-925-18	DIODE	HZS13JB2	
D508	8-719-924-88	DIODE	HZS7.5JB2	
D509	8-719-802-30	DIODE	1SS176	
D510	8-719-820-56	DIODE	S5688B	
⚠DB501	8-719-801-39	DIODE	1B4B41	
⚠DB502	8-719-312-09	DIODE	RBA-402	
		< IC >		
IC201	8-759-981-57	IC	RC2043DD	
IC202	8-752-059-56	IC	CXA1330S	
IC203	8-759-634-51	IC	M5218AP	
IC204	8-759-100-06	IC	uPC4556C	
IC205	8-759-100-06	IC	uPC4556C	
IC206	8-752-060-64	IC	CXA1198AP	
IC207	8-759-106-56	IC	uPC1297CA	
IC301	8-759-700-46	IC	CX10034	
IC302	8-759-913-42	IC	PST520C-2	
IC401	8-759-322-91	IC	HD63B03YP	
IC402	8-759-913-42	IC	PST520C-2	
IC403	8-759-247-64	IC	MBM27C256-A20-0905	
IC404	8-759-916-12	IC	SN74HC00AN	
IC405	8-759-917-18	IC	SN74HCU04AN	
IC406	8-759-601-04	IC	M54560P	
IC407	8-759-007-10	IC	MC74HC541N	
IC408	8-759-007-10	IC	MC74HC541N	
IC409	8-759-917-06	IC	SN74HC574AN	
IC410	8-759-917-06	IC	SN74HC574AN	
IC411	8-759-000-47	IC	MC14051BCP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description	Remark
IC412	8-759-000-47	IC MC14051BCP	
IC413	8-759-802-43	IC LA6358S	
IC414	8-759-634-51	IC M5218AP	
IC415	8-759-120-03	IC uPA2003C	
		< IC LINK >	
ICP501	1-532-605-00	LINK, IC ICP-N10 0.4A	
ICP502	1-532-605-00	LINK, IC ICP-N10 0.4A	
ICP503	1-532-685-00	LINK, IC ICP-N20 0.8A	
ICP504	1-532-605-00	LINK, IC ICP-N10 0.4A	
ICP505	1-532-685-00	LINK, IC ICP-N20 0.8A	
ICP506	1-532-637-00	LINK, IC ICP-N25 1.0A	
ICP507	1-532-685-00	LINK, IC ICP-N20 0.8A	
		< JACK >	
* J101	1-566-852-11	CONNECTOR (RECEPTACLE) 3P (BALANCED OUTPUT L)	
* J201	1-566-852-11	CONNECTOR (RECEPTACLE) 3P (BALANCED OUTPUT R)	
J301	1-565-258-11	JACK, PIN 4P (UNBALANCED INPUT/OUTPUT)	
		< COIL >	
L101	1-235-980-11	FILTER, LOW PASS	
L102	1-408-928-00	INDUCTOR 22mH	
L103	1-408-928-00	INDUCTOR 22mH	
L104	1-433-373-11	TRANSFORMER, BIAS OSCILLATION	
L201	1-235-980-11	FILTER, LOW PASS	
L202	1-408-928-00	INDUCTOR 22mH	
L203	1-408-928-00	INDUCTOR 22mH	
L204	1-433-373-11	TRANSFORMER, BIAS OSCILLATION	
L301	1-406-396-11	TRANSFORMER, OSCILLATION	
		< TRANSISTOR >	
Q101	8-729-820-24	TRANSISTOR 2SC3330-T	
Q102	8-729-820-24	TRANSISTOR 2SC3330-T	
Q103	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q104	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q105	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q201	8-729-820-24	TRANSISTOR 2SC3330-T	
Q202	8-729-820-24	TRANSISTOR 2SC3330-T	
Q203	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q204	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q205	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q301	8-729-900-80	TRANSISTOR DTC114ES	
Q302	8-729-820-24	TRANSISTOR 2SC3330-T	
Q303	8-729-820-24	TRANSISTOR 2SC3330-T	
Q304	8-729-900-80	TRANSISTOR DTC114ES	
Q305	8-729-900-61	TRANSISTOR DTA114ES	
Q306	8-729-900-80	TRANSISTOR DTC114ES	
Q307	8-729-820-24	TRANSISTOR 2SC3330-T	
Q308	8-729-820-24	TRANSISTOR 2SC3330-T	
Q309	8-729-900-61	TRANSISTOR DTA114ES	
Q310	8-729-900-61	TRANSISTOR DTA114ES	
Q311	8-729-900-61	TRANSISTOR DTA114ES	
Q312	8-729-900-80	TRANSISTOR DTC114ES	
Q313	8-729-900-61	TRANSISTOR DTA114ES	
Q314	8-729-809-05	TRANSISTOR 2SC4121	
Q315	8-729-900-61	TRANSISTOR DTA114ES	
Q316	8-729-900-61	TRANSISTOR DTA114ES	
Q317	8-729-900-61	TRANSISTOR DTA114ES	
Q318	8-729-900-61	TRANSISTOR DTA114ES	
Q319	8-729-900-61	TRANSISTOR DTA114ES	
Q320	8-729-900-61	TRANSISTOR DTA114ES	
Q321	8-729-900-61	TRANSISTOR DTA114ES	
Q322	8-729-900-61	TRANSISTOR DTA114ES	
Q323	8-729-820-24	TRANSISTOR 2SC3330-T	
Q324	8-729-900-80	TRANSISTOR DTC114ES	
Q325	8-729-900-80	TRANSISTOR DTC114ES	
Q327	8-729-900-80	TRANSISTOR DTC114ES	
Q401	8-729-117-11	TRANSISTOR 2SB1151	
Q402	8-729-117-11	TRANSISTOR 2SB1151	
Q403	8-729-117-11	TRANSISTOR 2SB1151	
Q501	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q502	8-729-141-89	TRANSISTOR 2SD1585-LK	
Q503	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q504	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q507	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q508	8-729-141-89	TRANSISTOR 2SD1585-LK	
Q509	8-729-107-77	TRANSISTOR 2SC3623-L	
Q510	8-729-141-89	TRANSISTOR 2SD1585-LK	
Q511	8-729-110-69	TRANSISTOR 2SA1409-K	
Q512	8-729-140-05	TRANSISTOR 2SB1116A-K	
Q513	8-729-900-80	TRANSISTOR DTC114ES	
Q514	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R101	1-249-393-11	CARBON 10 5% 1/4W F	
R102	1-249-441-11	CARBON 100K 5% 1/4W	
R103	1-247-811-31	CARBON 150 5% 1/4W	
R104	1-247-880-11	CARBON 110K 5% 1/4W	
R105	1-247-847-31	CARBON 4.7K 5% 1/4W	
R106	1-249-401-11	CARBON 47 5% 1/4W F	
R107	1-249-420-11	CARBON 1.8K 5% 1/4W F	
R108	1-247-838-00	CARBON 2K 5% 1/4W	
R109	1-247-887-00	CARBON 220K 5% 1/4W	
R110	1-249-431-11	CARBON 15K 5% 1/4W	

MAIN

Ref. No.	Part No.	Description				Remark
R111	1-247-847-31	CARBON	4.7K	5%	1/4W	
R112	1-247-843-31	CARBON	3.3K	5%	1/4W	
R113	1-247-807-31	CARBON	100	5%	1/4W	
R114	1-249-414-11	CARBON	560	5%	1/4W	F
R115	1-247-844-11	CARBON	3.6K	5%	1/4W	
R116	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R117	1-215-454-00	METAL	24K	1%	1/6W	
R118	1-215-415-00	METAL	560	1%	1/6W	
R119	1-249-417-11	CARBON	1K	5%	1/4W	F
R120	1-249-402-11	CARBON	56	5%	1/4W	F
R121	1-247-862-11	CARBON	20K	5%	1/4W	
R122	1-247-855-31	CARBON	10K	5%	1/4W	
R123	1-249-435-11	CARBON	33K	5%	1/4W	
R124	1-249-417-11	CARBON	1K	5%	1/4W	F
R125	1-249-433-11	CARBON	22K	5%	1/4W	
R126	1-249-433-11	CARBON	22K	5%	1/4W	
R127	1-249-433-11	CARBON	22K	5%	1/4W	
R128	1-249-433-11	CARBON	22K	5%	1/4W	
R129	1-249-435-11	CARBON	33K	5%	1/4W	
R130	1-249-408-11	CARBON	180	5%	1/4W	F
R131	1-249-436-11	CARBON	39K	5%	1/4W	
R132	1-247-855-31	CARBON	10K	5%	1/4W	
R133	1-247-858-11	CARBON	13K	5%	1/4W	
R134	1-249-432-11	CARBON	18K	5%	1/4W	
R135	1-249-437-11	CARBON	47K	5%	1/4W	
R136	1-247-858-11	CARBON	13K	5%	1/4W	
R137	1-249-432-11	CARBON	18K	5%	1/4W	
R138	1-249-432-11	CARBON	18K	5%	1/4W	
R139	1-247-858-11	CARBON	13K	5%	1/4W	
R140	1-249-437-11	CARBON	47K	5%	1/4W	
R141	1-247-807-31	CARBON	100	5%	1/4W	
R142	1-247-807-31	CARBON	100	5%	1/4W	
R143	1-249-435-11	CARBON	33K	5%	1/4W	
R144	1-247-832-11	CARBON	1.1K	5%	1/4W	
R145	1-249-422-11	CARBON	2.7K	5%	1/4W	
R146	1-249-418-11	CARBON	1.2K	5%	1/4W	F
R147	1-249-433-11	CARBON	22K	5%	1/4W	
R151	1-247-855-31	CARBON	10K	5%	1/4W	
R152	1-247-840-00	CARBON	2.4K	5%	1/4W	
R153	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R154	1-247-855-31	CARBON	10K	5%	1/4W	
R155	1-249-432-11	CARBON	18K	5%	1/4W	
R156	1-249-435-11	CARBON	33K	5%	1/4W	
R161	1-249-435-11	CARBON	33K	5%	1/4W	
R162	1-249-434-11	CARBON	27K	5%	1/4W	
R163	1-247-886-11	CARBON	200K	5%	1/4W	
R201	1-249-393-11	CARBON	10	5%	1/4W	F
R202	1-249-441-11	CARBON	100K	5%	1/4W	
R203	1-247-811-31	CARBON	150	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R204	1-247-880-11	CARBON	110K	5%	1/4W	
R205	1-247-847-31	CARBON	4.7K	5%	1/4W	
R206	1-249-401-11	CARBON	47	5%	1/4W	F
R207	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R208	1-247-838-00	CARBON	2K	5%	1/4W	
R209	1-247-887-00	CARBON	220K	5%	1/4W	
R210	1-249-431-11	CARBON	15K	5%	1/4W	
R211	1-247-847-31	CARBON	4.7K	5%	1/4W	
R212	1-247-843-31	CARBON	3.3K	5%	1/4W	
R213	1-247-807-31	CARBON	100	5%	1/4W	
R214	1-249-414-11	CARBON	560	5%	1/4W	F
R215	1-247-844-11	CARBON	3.6K	5%	1/4W	
R216	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R217	1-215-454-00	METAL	24K	1%	1/6W	
R218	1-215-415-00	METAL	560	1%	1/6W	
R219	1-249-434-11	CARBON	27K	5%	1/4W	
R220	1-249-402-11	CARBON	56	5%	1/4W	F
R221	1-247-862-11	CARBON	20K	5%	1/4W	
R222	1-247-855-31	CARBON	10K	5%	1/4W	
R223	1-249-435-11	CARBON	33K	5%	1/4W	
R224	1-249-417-11	CARBON	1K	5%	1/4W	F
R225	1-249-433-11	CARBON	22K	5%	1/4W	
R226	1-249-433-11	CARBON	22K	5%	1/4W	
R227	1-249-433-11	CARBON	22K	5%	1/4W	
R228	1-249-433-11	CARBON	22K	5%	1/4W	
R229	1-249-435-11	CARBON	33K	5%	1/4W	
R230	1-249-408-11	CARBON	180	5%	1/4W	F
R231	1-249-436-11	CARBON	39K	5%	1/4W	
R232	1-247-855-31	CARBON	10K	5%	1/4W	
R233	1-247-858-11	CARBON	13K	5%	1/4W	
R234	1-249-432-11	CARBON	18K	5%	1/4W	
R235	1-249-437-11	CARBON	47K	5%	1/4W	
R236	1-247-858-11	CARBON	13K	5%	1/4W	
R237	1-249-432-11	CARBON	18K	5%	1/4W	
R238	1-249-432-11	CARBON	18K	5%	1/4W	
R239	1-247-858-11	CARBON	13K	5%	1/4W	
R240	1-249-437-11	CARBON	47K	5%	1/4W	
R241	1-247-807-31	CARBON	100	5%	1/4W	
R242	1-247-807-31	CARBON	100	5%	1/4W	
R243	1-249-435-11	CARBON	33K	5%	1/4W	
R244	1-247-832-11	CARBON	1.1K	5%	1/4W	
R245	1-249-422-11	CARBON	2.7K	5%	1/4W	
R246	1-249-418-11	CARBON	1.2K	5%	1/4W	F
R247	1-249-433-11	CARBON	22K	5%	1/4W	
R251	1-247-855-31	CARBON	10K	5%	1/4W	
R252	1-247-840-00	CARBON	2.4K	5%	1/4W	
R253	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R254	1-247-855-31	CARBON	10K	5%	1/4W	

MAIN

Ref. No.	Part No.	Description				Remark
R255	1-249-432-11	CARBON	18K	5%	1/4W	
R256	1-249-435-11	CARBON	33K	5%	1/4W	
R261	1-249-435-11	CARBON	33K	5%	1/4W	
R262	1-249-434-11	CARBON	27K	5%	1/4W	
R263	1-247-886-11	CARBON	200K	5%	1/4W	
R301	1-249-426-11	CARBON	5.6K	5%	1/4W	
R302	1-247-864-11	CARBON	24K	5%	1/4W	
R303	1-247-847-31	CARBON	4.7K	5%	1/4W	
R304	1-247-847-31	CARBON	4.7K	5%	1/4W	
R305	1-247-883-00	CARBON	150K	5%	1/4W	
R306	1-247-880-11	CARBON	110K	5%	1/4W	
R307	1-249-437-11	CARBON	47K	5%	1/4W	
R308	1-247-872-11	CARBON	51K	5%	1/4W	
R309	1-249-439-11	CARBON	68K	5%	1/4W	
R310	1-247-876-11	CARBON	75K	5%	1/4W	
R311	1-247-872-11	CARBON	51K	5%	1/4W	
R312	1-249-440-11	CARBON	82K	5%	1/4W	
R313	1-247-870-11	CARBON	43K	5%	1/4W	
R314	1-249-439-11	CARBON	68K	5%	1/4W	
R315	1-247-883-00	CARBON	150K	5%	1/4W	
R316	1-247-883-00	CARBON	150K	5%	1/4W	
R317	1-247-847-31	CARBON	4.7K	5%	1/4W	
R319	1-247-847-31	CARBON	4.7K	5%	1/4W	
R320	1-249-437-11	CARBON	47K	5%	1/4W	
R321	1-249-447-11	CARBON	1	5%	1/4W	
R322	1-247-808-11	CARBON	110	5%	1/4W	F
R323	1-249-438-11	CARBON	56K	5%	1/4W	
R324	1-249-438-11	CARBON	56K	5%	1/4W	
R325	1-247-862-11	CARBON	20K	5%	1/4W	
R327	1-247-847-31	CARBON	4.7K	5%	1/4W	
R328	1-249-430-11	CARBON	12K	5%	1/4W	
R329	1-247-807-31	CARBON	100	5%	1/4W	
R330	1-247-847-31	CARBON	4.7K	5%	1/4W	
R331	1-249-436-11	CARBON	39K	5%	1/4W	
R332	1-247-847-31	CARBON	4.7K	5%	1/4W	
R333	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R335	1-249-417-11	CARBON	1K	5%	1/4W	F
R336	1-247-860-11	CARBON	16K	5%	1/4W	
R337	1-249-432-11	CARBON	18K	5%	1/4W	
R338	1-249-417-11	CARBON	1K	5%	1/4W	F
R339	1-247-855-31	CARBON	10K	5%	1/4W	
R340	1-247-855-31	CARBON	10K	5%	1/4W	
R341	1-247-843-31	CARBON	3.3K	5%	1/4W	
R344	1-247-881-00	CARBON	120K	5%	1/4W	
R401	1-247-847-31	CARBON	4.7K	5%	1/4W	
R402	1-249-401-11	CARBON	47	5%	1/4W	F
R403	1-249-437-11	CARBON	47K	5%	1/4W	
R404	1-247-847-31	CARBON	4.7K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R405	1-247-847-31	CARBON	4.7K	5%	1/4W	
R406	1-247-847-31	CARBON	4.7K	5%	1/4W	
R409	1-247-887-00	CARBON	220K	5%	1/4W	
R410	1-249-437-11	CARBON	47K	5%	1/4W	
R411	1-249-437-11	CARBON	47K	5%	1/4W	
R412	1-247-887-00	CARBON	220K	5%	1/4W	
R413	1-247-887-00	CARBON	220K	5%	1/4W	
R414	1-249-417-11	CARBON	1K	5%	1/4W	F
R415	1-249-417-11	CARBON	1K	5%	1/4W	F
R416	1-249-409-11	CARBON	220	5%	1/4W	F
R417	1-249-409-11	CARBON	220	5%	1/4W	F
R418	1-249-417-11	CARBON	1K	5%	1/4W	F
R419	1-249-417-11	CARBON	1K	5%	1/4W	F
R420	1-249-417-11	CARBON	1K	5%	1/4W	F
R421	1-249-417-11	CARBON	1K	5%	1/4W	F
R422	1-249-417-11	CARBON	1K	5%	1/4W	F
R423	1-249-417-11	CARBON	1K	5%	1/4W	F
R424	1-249-417-11	CARBON	1K	5%	1/4W	F
R425	1-249-417-11	CARBON	1K	5%	1/4W	F
R426	1-249-417-11	CARBON	1K	5%	1/4W	F
R427	1-249-417-11	CARBON	1K	5%	1/4W	F
R428	1-249-417-11	CARBON	1K	5%	1/4W	F
R429	1-249-414-11	CARBON	560	5%	1/4W	F
R430	1-249-414-11	CARBON	560	5%	1/4W	F
R431	1-249-414-11	CARBON	560	5%	1/4W	F
R432	1-249-414-11	CARBON	560	5%	1/4W	F
R433	1-249-414-11	CARBON	560	5%	1/4W	F
R434	1-249-414-11	CARBON	560	5%	1/4W	F
R435	1-247-843-31	CARBON	3.3K	5%	1/4W	
R436	1-247-843-31	CARBON	3.3K	5%	1/4W	
R437	1-247-843-31	CARBON	3.3K	5%	1/4W	
R438	1-215-483-00	METAL	390K	1%	1/6W	
R439	1-215-476-00	METAL	200K	1%	1/6W	
R440	1-215-469-00	METAL	100K	1%	1/6W	
R441	1-215-453-00	METAL	22K	1%	1/6W	
R442	1-249-435-11	CARBON	33K	5%	1/4W	
R443	1-249-435-11	CARBON	33K	5%	1/4W	
R444	1-215-433-00	METAL	3.3K	1%	1/6W	
R445	1-215-433-00	METAL	3.3K	1%	1/6W	
R446	1-215-433-00	METAL	3.3K	1%	1/6W	
R447	1-215-433-00	METAL	3.3K	1%	1/6W	
R448	1-249-409-11	CARBON	220	5%	1/4W	F
R501	1-247-839-31	CARBON	2.2K	5%	1/4W	
R502	1-247-839-31	CARBON	2.2K	5%	1/4W	
R503	1-247-839-31	CARBON	2.2K	5%	1/4W	
R504	1-247-839-31	CARBON	2.2K	5%	1/4W	
R505	1-247-855-31	CARBON	10K	5%	1/4W	
R506	1-249-409-11	CARBON	220	5%	1/4W	F
R507	1-249-418-11	CARBON	1.2K	5%	1/4W	F

MAIN | MODE SW | PITCH CONTROL | POWER SWITCH

REMOCON TERMINAL

Ref. No.	Part No.	Description			Remark
R508	1-249-414-11	CARBON	560	5% 1/4W	F
R509	1-247-823-31	CARBON	470	5% 1/4W	
R510	1-249-426-11	CARBON	5.6K	5% 1/4W	
R511	1-247-839-31	CARBON	2.2K	5% 1/4W	
R512	1-247-847-31	CARBON	4.7K	5% 1/4W	
R513	1-249-417-11	CARBON	1K	5% 1/4W	F
R514	1-249-426-11	CARBON	5.6K	5% 1/4W	
R515	1-249-402-11	CARBON	56	5% 1/4W	F
R516	1-247-855-31	CARBON	10K	5% 1/4W	
R517	1-247-818-11	CARBON	300	5% 1/4W	
R518	1-249-433-11	CARBON	22K	5% 1/4W	
		< COMPOSITION CIRCUIT BLOCK >			
RB401	1-239-777-11	RESISTOR ARRAY			
RB402	1-239-777-11	RESISTOR ARRAY			
RB403	1-235-724-11	RES, ENCAPSULATED CERMET			
RB404	1-235-724-11	RES, ENCAPSULATED CERMET			
RB405	1-235-724-11	RES, ENCAPSULATED CERMET			
RB406	1-239-829-11	RESISTOR ARRAY			
RB407	1-239-777-11	RESISTOR ARRAY			
		< VARIABLE RESISTOR >			
RV101	1-226-703-11	RES, ADJ, METAL 10K			
RV102	1-226-773-11	RES, ADJ, METAL 22K			
RV103	1-226-773-11	RES, ADJ, METAL 22K			
RV201	1-226-703-11	RES, ADJ, METAL 10K			
RV202	1-226-773-11	RES, ADJ, METAL 22K			
RV203	1-226-773-11	RES, ADJ, METAL 22K			
RV301	1-226-703-11	RES, ADJ, METAL 10K			
RV401	1-226-773-11	RES, ADJ, METAL 22K			
RV402	1-226-773-11	RES, ADJ, METAL 22K			
RV403	1-226-773-11	RES, ADJ, METAL 22K			
RV404	1-226-773-11	RES, ADJ, METAL 22K			
RV405	1-226-773-11	RES, ADJ, METAL 22K			
		< RELAY >			
RY301	1-515-614-11	RELAY			
		< VIBRATOR >			
X401	1-527-726-00	VIBRATOR, CRYSTAL (4MHz)			
**********					
*	1-649-792-11	MODE SW BOARD			
		**********			
		< CAPACITOR >			
C851	1-136-153-00	FILM	0.01uF	5%	50V

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R851	1-247-832-11	CARBON	1.1K	5% 1/4W	
		< SWITCH >			
S851	1-572-444-11	SWITCH, SLIDE (OPERATION)			
**********					
*	1-634-403-11	PITCH CONTROL BOARD			
		**********			
		< TRANSISTOR >			
Q821	8-729-900-80	TRANSISTOR DTC114ES			
		< VARIABLE RESISTOR >			
RV821	1-241-142-11	RES, VAR, CARBON 20K			
RV822	1-226-773-11	RES, ADJ, METAL 22K			
		< RELAY >			
RY821	1-515-614-11	RELAY			
**********					
*	1-634-404-11	POWER SWITCH BOARD			
		**********			
		< DIODE >			
D751	8-719-812-43	TLG124A			
		< SWITCH >			
S751	1-554-881-11	SWITCH, PUSH (1 KEY)			
**********					
*	1-649-334-11	REMOCON TERMINAL BOARD			
		**********			
		< CAPACITOR >			
C871	1-161-051-00	CERAMIC	0.01uF	10%	50V
C872	1-161-051-00	CERAMIC	0.01uF	10%	50V
C873	1-161-051-00	CERAMIC	0.01uF	10%	50V
C874	1-161-051-00	CERAMIC	0.01uF	10%	50V
C875	1-161-051-00	CERAMIC	0.01uF	10%	50V
C876	1-161-051-00	CERAMIC	0.01uF	10%	50V
C877	1-161-063-00	CERAMIC	0.1uF	10%	50V
C878	1-161-063-00	CERAMIC	0.1uF	10%	50V
C879	1-161-063-00	CERAMIC	0.1uF	10%	50V
C880	1-161-063-00	CERAMIC	0.1uF	10%	50V
C881	1-161-063-00	CERAMIC	0.1uF	10%	50V
C882	1-161-063-00	CERAMIC	0.1uF	10%	50V
C883	1-124-443-00	ELECT	100uF	20%	10V

REMOCON TERMINAL

INDICATION SW

Ref. No.	Part No.	Description				Remark
C884	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C885	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C886	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C887	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C888	1-161-063-00	CERAMIC	0.1uF	10%	50V	
		< CONNECTOR >				
* CN871	1-564-510-11	PLUG, CONNECTOR 7P				
* CN872	1-564-508-11	PLUG, CONNECTOR 5P				
		< DIODE >				
D871	8-719-802-30	DIODE	1SS176			
D872	8-719-802-30	DIODE	1SS176			
D873	8-719-802-30	DIODE	1SS176			
D874	8-719-802-30	DIODE	1SS176			
		< COMPOSITION CIRCUIT BLOCK >				
DA871	8-719-980-37	DIODE	DAN803			
DA872	8-719-980-36	DIODE	DAP803			
DA873	8-719-980-37	DIODE	DAN803			
DA874	8-719-980-36	DIODE	DAP803			
		< IC >				
IC871	8-759-007-10	IC	MC74HC541N			
IC872	8-759-601-04	IC	M54560P			
		< JACK >				
* J871	1-563-772-11	D-SUB	25P			
		< RESISTOR >				
R871	1-249-417-11	CARBON	1K	5%	1/4W F	
R872	1-249-417-11	CARBON	1K	5%	1/4W F	
R873	1-249-417-11	CARBON	1K	5%	1/4W F	
R874	1-249-417-11	CARBON	1K	5%	1/4W F	
R875	1-249-417-11	CARBON	1K	5%	1/4W F	
R876	1-249-417-11	CARBON	1K	5%	1/4W F	
R877	1-249-393-11	CARBON	10	5%	1/4W F	
		< COMPOSITION CIRCUIT BLOCK >				
RA871	1-235-736-11	RES, ENCAPSULATED CERMET				
RA872	1-235-736-11	RES, ENCAPSULATED CERMET				
**********						
*	A-4588-419-A	INDICATION SW BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C601	1-126-176-11	ELECT	220uF	20%	10V	
C602	1-126-157-11	ELECT	10uF	20%	16V	
C603	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C604	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C605	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C606	1-161-063-00	CERAMIC	0.1uF	10%	50V	
		< DIODE >				
D601	8-719-802-30	DIODE	1SS176			
D602	8-719-802-30	DIODE	1SS176			
D603	8-719-802-30	DIODE	1SS176			
D604	8-719-802-30	DIODE	1SS176			
D605	8-719-802-30	DIODE	1SS176			
D606	8-719-403-85	LN222RP-LS (SCAN)				
D607	8-719-403-85	LN222RP-LS (AMS)				
D608	8-719-403-85	LN222RP-LS (REC)				
D609	8-719-812-44	TL0124 (PAUSE)				
D610	8-719-812-43	TLG124A (PLAY)				
D611	8-719-802-30	DIODE	1SS176			
D612	8-719-802-30	DIODE	1SS176			
		< FLUORESCENT DISPLAY PANEL >				
FLT601	1-519-491-11	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC601	8-759-302-98	IC	HD614042SA87			
IC602	8-759-000-51	IC	MC14069UBCP			
IC603	8-759-729-03	IC	NJM2903D			
IC604	8-759-913-42	IC	PST520C-2			
		< TRANSISTOR >				
Q601	8-729-900-61	TRANSISTOR	DTA114ES			
Q602	8-729-900-80	TRANSISTOR	DTC114ES			
Q603	8-729-900-80	TRANSISTOR	DTC114ES			
Q604	8-729-900-61	TRANSISTOR	DTA114ES			
Q605	8-729-900-61	TRANSISTOR	DTA114ES			
Q606	8-729-900-61	TRANSISTOR	DTA114ES			
Q607	8-729-900-61	TRANSISTOR	DTA114ES			
Q608	8-729-900-61	TRANSISTOR	DTA114ES			
Q609	8-729-900-61	TRANSISTOR	DTA114ES			
Q610	8-729-900-61	TRANSISTOR	DTA114ES			
Q611	8-729-900-61	TRANSISTOR	DTA114ES			
Q612	8-729-900-80	TRANSISTOR	DTC114ES			
Q613	8-729-900-61	TRANSISTOR	DTA114ES			
Q614	8-729-206-29	TRANSISTOR	RN1211			
Q615	8-729-900-61	TRANSISTOR	DTA114ES			
Q616	8-729-900-80	TRANSISTOR	DTC114ES			

INDICATION SW | VOLTAGE SELECTION

Ref.No.	Part No.	Description			Remark
		< RESISTOR >			
R601	1-249-441-11	CARBON	100K	5%	1/4W
R602	1-247-855-31	CARBON	10K	5%	1/4W
R603	1-249-441-11	CARBON	100K	5%	1/4W
R604	1-249-441-11	CARBON	100K	5%	1/4W
R605	1-249-441-11	CARBON	100K	5%	1/4W
R606	1-249-441-11	CARBON	100K	5%	1/4W
R607	1-249-441-11	CARBON	100K	5%	1/4W
R608	1-249-441-11	CARBON	100K	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-441-11	CARBON	100K	5%	1/4W
R611	1-247-893-11	CARBON	390K	5%	1/4W
R612	1-247-893-11	CARBON	390K	5%	1/4W
R613	1-247-893-11	CARBON	390K	5%	1/4W
R614	1-247-893-11	CARBON	390K	5%	1/4W
R615	1-247-893-11	CARBON	390K	5%	1/4W
R616	1-247-893-11	CARBON	390K	5%	1/4W
R617	1-249-437-11	CARBON	47K	5%	1/4W
R618	1-249-437-11	CARBON	47K	5%	1/4W
R619	1-249-441-11	CARBON	100K	5%	1/4W
R620	1-249-441-11	CARBON	100K	5%	1/4W
R621	1-247-847-31	CARBON	4.7K	5%	1/4W
R622	1-247-847-31	CARBON	4.7K	5%	1/4W
R623	1-215-452-00	METAL	20K	1%	1/6W
R624	1-215-452-00	METAL	20K	1%	1/6W
R625	1-215-452-00	METAL	20K	1%	1/6W
R626	1-215-452-00	METAL	20K	1%	1/6W
R627	1-215-452-00	METAL	20K	1%	1/6W
R628	1-215-452-00	METAL	20K	1%	1/6W
R629	1-215-445-00	METAL	10K	1%	1/6W
R630	1-215-445-00	METAL	10K	1%	1/6W
R631	1-215-445-00	METAL	10K	1%	1/6W
R632	1-215-445-00	METAL	10K	1%	1/6W
R633	1-215-445-00	METAL	10K	1%	1/6W
R634	1-215-445-00	METAL	10K	1%	1/6W
R635	1-215-452-00	METAL	20K	1%	1/6W
R636	1-215-425-00	METAL	1.5K	1%	1/6W
R637	1-215-460-00	METAL	43K	1%	1/6W
R638	1-249-409-11	CARBON	220	5%	1/4W F
R639	1-249-409-11	CARBON	220	5%	1/4W F
R640	1-249-409-11	CARBON	220	5%	1/4W F
R641	1-249-412-11	CARBON	390	5%	1/4W F
R642	1-249-412-11	CARBON	390	5%	1/4W F
R643	1-249-431-11	CARBON	15K	5%	1/4W
		< SWITCH >			
S601-7	1-572-403-11	SWITCH, PUSH (7 KEY) (COUNTER RESET/MAS /SCAN/DOLBY NR/MPX FILTER)			

Ref.No.	Part No.	Description	Remark
S608	1-554-937-11	SWITCH, KEY BOARD (STOP)	
S609	1-554-937-11	SWITCH, KEY BOARD (PAUSE)	
S610	1-554-937-11	SWITCH, KEY BOARD (REC MUTE)	
S611	1-554-937-11	SWITCH, KEY BOARD (REW)	
S612	1-554-937-11	SWITCH, KEY BOARD (PLAY)	
S613	1-554-937-11	SWITCH, KEY BOARD (FF)	
S614	1-554-937-11	SWITCH, KEY BOARD (REC)	
*	1-649-791-11	VOLTAGE SELECTION BOARD	
		MISCELLANEOUS	
⚠CN901	1-580-375-21	INLET 3P	
HE901	X-2335-233-1	HEAD ASSY, ERASE	
HRP901	X-2335-232-1	HEAD ASSY, REC/PB	
⚠T901	1-423-852-11	TRANSFORMER, POWER	
		ACCESSORIES & PACKING MATERIALS	
	1-551-631-22	CORD, POWER	
	2-338-752-11	MANUAL, INSTRUCTION	
	9-910-999-32	BAG, PROTECTION	

HARDWARE LIST

#1	7-685-245-19	SCREW +KTP 3X6 TYPE2 NON-SLIT
#2	7-685-645-79	SCREW +BTP 3X6 TYPE2 N-S
#3	7-682-560-09	SCREW +B 4X6
#4	7-621-775-40	SCREW +B 2.6X8
#5	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S
#6	7-685-104-01	SCREW +P 2X6 TYPE4
#7	7-682-547-09	SCREW (M3X6), S TITE, + BTT
#8	7-685-649-79	SCREW +BTP 3X8 TYPE2 N-S
#9	7-682-561-04	SCREW +B 4X8
#11	7-623-423-07	LW 4, TYPE B

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.